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THE JOURNAL

OF THE

American Medical Association

Subscription, $7.00 | PUBLISHED WEEKLY | Single Copies, 25 Cents

VOLUME 95, No. 22 | 535 North Dearborn Street, CHICAGO, ILL. | NOVEMBER 29, 1930

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Entered as Second-Class Matter, June 25, 1885, at the Postoffice at Chicago, Ill., under Act of March 3, 1879. Acceptance for mailing at special rate of postage provided for in Sec. 1103, Act of Oct. 3, 1917, authorized on June 14, 1918. If undeliverable, forwarding and return postage is guaranteed.

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The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 95, NO. 22 CHICAGO, ILLINOIS NOVEMBER 29, 1930

CLINICAL SIGNS OF HEART DISEASE

WITH PARTICULAR REFERENCE TO ETIOLOGY *

JAMES B. HERRICK, M.D.

CHICAGO

My special purpose in this paper is to stress the importance of a consideration of etiology in the diagnosis of heart disease. Perhaps most of us admit that an etiologic diagnosis is important. Why, then, take time to discuss the question? The answer is that in practice the etiologic feature is largely overlooked.

The classification of heart disease has been, and still is, in a crude state. Chaotic is too strong a word to use regarding it, but it is decidedly unsystematic and unsatisfactory. The same is true of nomenclature. No wonder, then, that there is little uniformity in the diagnoses made by even the best physicians. The condition diagnosed aortic regurgitation by one is called by another syphilis of the aorta and aortic valves; by a third, aortic leak with cardiac hypertrophy but good compensation. The next patient is said by one physician to have mitral stenosis. The disease is labeled auricular fibrillation by a second, heart failure by a third, rheumatic valvular disease by a fourth. One physician stresses the anatomic location of the lesion and its pathologic nature, another the disturbance of function, another some striking clinical phenomenon, a few the etiologic factor.

Why should not physicians employ in diagnosis the classification suggested by the Heart Committee of the New York Tuberculosis and Health Association, which is in conformity with the nomenclature for cardiac diagnosis approved by the American Heart Association? The case of aortic leak might then be called syphilitic aortitis with aortic regurgitation, cardiac hypertrophy, regular sinus rhythm, class 2 A; i. e., activity slightly limited. Here the etiologic and pathologic anatomic features are plainly set forth with the clinical and functional facts also considered. The case of mitral stenosis may be described as rheumatic mitral disease with stenosis, auricular fibrillation with activity seriously limited, classed briefly as class 2 B. Again, etiology, anatomic pathologic lesion and functional capacity are expressed. All of these features may with advantage be included in the diagnosis.

But some physicians may say, "Why all this fuss about these details of diagnosis?" What a practitioner desires to know is, first, whether or not there is organic heart disease or only a cardiac disturbance due to conditions outside the heart, and, second, whether the heart is competent to perform its work. He wishes to tell his patient how he may live so as to maintain for as long a time as possible a fairly efficient heart. The attitude of these physicians is the same as that of the medical student who in ward class, after the subject of the differentiation of the various valvular lesions had been gone over and had been studied in several patients, asked me the embarrassing question, "But, Professor, what difference does it make? And this question must often occur to us as we see the dyspneic, cyanotic and edematous patients with irregular and laboring hearts. What difference does it make whether the valve involved is the mitral or the aortic, whether the myocardium is fibrotic from preceding inflammation or from a degenerative process, whether the hypertrophy is due to a primary valvular or renal cause or is part of an essential hypertension? The fact that confronts the physician is that here is a patient with an incompetent heart, in urgent need of help. Without consideration of the finer points of diagnosis, anatomic or etiologic, he must proceed immediately to measures of relief which will be practically the same, no matter what the cause. So he advises rest, proper diet, elimination, digitalis or morphine as seems appropriate.

Now, this is not really a fair view of the situation; at least it is a narrow view. Of course, the patient's welfare is the prime consideration. He is in immediate danger and must be given first aid without too much discussion of the academic question as to how and why he came by the distressing condition. But it is important that the physician should know causes. The outlook for the future and the subsequent treatment may depend much on such knowledge. A heart muscle incompetent from a suddenly developing infarct due to an acute coronary thrombosis may have an entirely different prognosis and demand a different treatment from the myocardium that has been slowly but progressively failing from the development in it of patches of fibrosis due to gradual occlusion of many coronary twigs. An aorta and aortic valve deformed from a still active syphilis imply an outlook and therapy different from that demanded by the lesions of old-age atheromatosis.

Let me interject another comment. It is sometimes felt by the practitioner that the physican who is meticulous as to diagnosis and classification based on an accurate knowledge of causes and the details of the pathologic and physiologic processes involved is an unpractical man, particularly if he is a physician whose training has been largely in the hospital and laboratory. This is surely wrong. There is no inherent incompatibility between scientific habits of thinking and practical common sense. In fact, some of the most scientifically minded practitioners are the most sound in their practice. Other things being equal, the scientifically trained mind will think more clearly and logically, will direct practical activities more rationally than the so-called

* Read before the Section on Practice of Medicine at the Eighty-First Annual Session of the American Medical Association, Detroit, June 25, 1930.

empiric mind that is bolstered up chiefly by "experience." It is sometimes assumed that empiricism and practical common sense are synonymous. This is by no means always true. Empiricism has no monopoly on common sense. The empiric physician is all too frequently most gullible as to acceptance of fantastic theories, most unthinking or even dangerous in his therapy. In the final analysis, a good deal depends on what kind of a mind and how much of a mind the physician, whether scientific or practical, had to begin with.

In a discussion of clinical signs of heart disease with particular reference to etiology, the questions involved are difficult, the answers somewhat uncertain. Too many cases are encountered in which even with greatest care the cause of the cardiac symptoms may escape detection. But it is only by trial and search that knowledge will come. The search for causes, the comparison of results, together with statistical, clinical and necropsy studies will enable one to be more accurate in the diagnosis than has been the case in the past. To be impressed by the lack of uniformity in diagnosis, one has only to go to the health department of any large city and look over the causes of death as recorded on the death certificates. Syphilis as a cause is rarely put down, largely because of the physician's desire to shield the reputation of the dead man and his family. Pericarditis, endocarditis and myocarditis and angina pectoris are in evidence. But—I am citing Dr. Halsey as authority for the statement—other forms of heart disease, largely the senescent and arteriosclerotic group, make up 88 per cent of cases. On the whole, the diagnoses are vague and lack uniformity. For purposes of study and comparison, they are of little value. But they should be of great value. A statement on the death certificate as to the cause of the disease, or even that the cause was unknown, would be helpful. It would show to the student of statistics that this point had been considered and would permit of deductions that would otherwise be unwarranted.

Only a few suggestions will be here offered. As to how to diagnose etiologically: My purpose is rather to show the necessity and advantage of such a diagnosis. No claim is made as to completeness in the presentation. To go over the entire subject would involve a repetition of the old story of the importance of studying the patient by the familiar methods of history taking, physical examination and repeated observation, with, when necessary, aid from laboratories as of chemistry and bacteriology, from instruments of precision such as the electrocardiograph and x-ray machine, and from specialists. In general, more facts as to etiology will be elicited by the history and physical examination and repeated observation, all of which implies closer personal contact between physician and patient, than by the laboratory and instrumental tests.

The age at which symptoms were noted may give the clue to congenital heart disease. The partiality of rheumatic disease for early years, of sclerotic and degenerative disease for the later years, and of syphilitic cardiovascular disease for the middle period of life is to be remembered. In connection with rheumatism, careful inquiry may elicit a history of mild chorea or suggestive growing pains. Inquiry should be made as to previous purpura or tonsillitis. Syphilis may be betrayed by painstaking search for suspicious facts in the history such as the supposedly innocent sore, alopecia, the stubborn sore throat. Or the obscure precordial distress some years ago with a little fever, the physician puzzled to account for a slightly rapid pulse, and a soft murmur at the base may tend to show that syphilis is the probable cause of the aortic lesion. And, of course, the physical examination for stigmas of this disease in all organs should not be forgotten. In other words, the diagnosis of syphilis of the aorta, valves, coronary artery or myocardium is not to depend on the Wassermann test or the roentgenographic observations alone.

So with acute endocarditis. Bacteriology should, of course, be employed. But the clinical features of rheumatic endocarditis, of the subacute type due to *Streptococcus viridans* or the forms due to pyogenic germs like the staphylococcus are in general so distinct and clear cut as to permit of diagnosis in spite of negative bacteriologic reports.

Then there are the thyroid gland cases. Here again the history and the examination are of fundamental importance. The estimation of the basal metabolic rate is often a deciding factor in reaching a conclusion. Good judgment, however, is necessary in interpreting the results of this test. Slight variations from the normal should not be given too great weight unless checked by tests repeated under carefully controlled conditions. On the other hand, it should not be forgotten that hearts that are large, the seat of murmurs and wildly irregular may have as an aggravating or even an essential cause of the serious disturbance a long perverted overactivity of the thyroid gland.

Other toxic causes may occasionally be recognized—too much tea or coffee. Extrasystoles from tobacco are seen. Digitalis, cocaine and other drugs may give rise to irregularities of rhythm. Some infectious diseases, as diphtheria or scarlet fever, may be associated with arrhythmia which, while primarily bacterial in origin, is really due to the local effect of toxins. The cardiac upsets associated with uremia should be kept in mind. And gastro-intestinal disturbances are at times responsible for the cardiac symptoms that bring the patient to the physician.

There is a group, and it is not a small one, that is commonly called the cardiac neuroses. No organic disease of the heart can be made out; there is no detectable bacterial or toxic factor, no disease in other organs—lung, kidney, thyroid, stomach, bowel—to explain it. Yet the patients are real sufferers, the heart is irritable with a rate tending to be rapid, there are palpitation, precordial distress, breathlessness, fatigue, sweating, flushing of the skin. Cases with the long category of symptoms included under the term neurocirculatory asthenia or effort syndrome show mental variations all the way from slight degrees of apprehension to the extreme types of fear that lead one at times to question whether a phobia has not gotten over into the group of the pathologic psychoses that border on insanity. The search for the cause here is not to be limited to a hunt for evidence of anatomic change in the heart, to increase in size, altered blood pressure, abnormal electrocardiogram, detection of a microbic or toxic agent. These things, of course, should be searched for. Obscure toxic or endocrine disturbances may thus be uncovered. But in these cases there is a chance for the wise physician to put to practice all that he knows about the human mind. He may not be versed in the various schools of psychology, may not know whether he is searching for a cause according to the tenets of William James or Bergson or Freud, but he must go into questions of heredity, of childhood training, of home and social surroundings. Love affairs, skeletons in

closets, financial status, day dreams and night dreams, ambitions and failures—all these must be considered.

A concrete case has come to my attention as I am writing this paper. A woman of forty-eight was troubled with fatigue, rapid pulse, a small goiter, a slightly elevated blood pressure, sleeplessness. Certainly there bulked very large in the etiology the fact that she was an introspective nurse, that she had had financial reverses and that she was annoyed by three well meaning but nagging friends, who insisted that the nurse come to live with them, give up her own doctor and change to one of their choosing. She declared frankly to me, as she had to her physician, that she simply could not live happily under the same roof with either one of her two sisters. They got on her nerves. As to living with her friend and former partner, that seemed out of the question because this friend had just married the patient's sweetheart, whom she herself had fondly hoped to marry and whom she still violently loved. Some hypertension, some overwork during a recent influenzal attack, possibly some thyroid influence were causative factors in her condition, but surely a large psychic element was present. The patient frankly said her symptoms, she believed, were chiefly emotional.

This case further illustrates an important feature of diagnosis from a causal point of view. There is often more than one cause. We must determine as nearly as possible what are underlying causes—heredity, so-called constitution, general arteriosclerosis, poor hygienic surroundings—and what is the immediate cause of the present cardiac upset. Proper management often depends on a knowledge of the multiplicity of causes with an appreciation of the relative importance of each. A very important group is the one in which the heart disease depends on some general systemic disease—arteriosclerosis, hypertension or such diseases as nephritis, diabetes or gout.

Lastly, in some cases the exact cause for the cardiac condition cannot be discovered. Etiology is for the time at least unknown. But this fact, as has already been said, should be noted in the diagnosis.

I have consciously strayed a little from the title of this paper. I have done this because it seemed possible in limited space to touch on only a few suggestive facts as to methods of diagnosis from the etiologic standpoint. Also, it seemed quite as important to stress the need for, and the advantage of, such a form of diagnosis. If some system of classification and nomenclature, such as that of the Heart Committee of the New York Tuberculosis and Health Association and the American Heart Association, is followed, it will make for uniformity, clarity and scientific accuracy. We shall thereby become better practitioners and the patient will be the gainer.

122 South Michigan Avenue.

Lean Types of Dyspituitarism.—In all that has been written about fat metabolism in relation to the hypophysis and hypothalamus, emphasis has been laid almost exclusively on adiposity and little said of emaciation. If the adiposity is a paralytic phenomenon, as some assume polyuria to be, should we not expect to see a significant loss of weight as an irritative phenomenon? The condition of adiposogenital dystrophy has so long engaged the attention of clinicians, the fact that there are lean as well as fat types of dyspituitarism associated with hypophysial as well as with hypothalamic tumors, has not received the attention it deserves.—Cushing, Harvey: Neurohypophysial Mechanisms from a Clinical Standpoint, Lister Memorial Lecture, *Lancet*, July 26, 1930.

THE PROGRESSIVE NATURE OF CARDIAC FAILURE*

C. SIDNEY BURWELL, M.D.
NASHVILLE, TENN.

It is of use from time to time to take stock, so to speak, of our knowledge of a particular disease, to see exactly where we stand with regard to it, to inquire to what conclusions the accumulated facts seem to point, and to ascertain in what direction we may look for fruitful investigation in the future.
—*Osler*.[1]

Heart disease is the most frequent cause of death in the United States today. It causes not only many premature deaths but also a great amount of crippling or disabling illness. The control of heart disease is thus a problem the solution of which is of first importance to the public health.

It is obvious that the most successful method of preventing or postponing death from heart disease is to prevent the occurrence, to reduce the severity or to shorten the duration of the conditions leading to heart disease. Speaking in general terms, this means the control of hypertension and vascular diseases of acute rheumatic fever, and of syphilis. The most effective way, then, to attack heart disease is to attack syphilis, hypertension and acute rheumatic fever. This, however, is more easily said than done.

Essential hypertension, for example, is often recognized as such in the early years of the disease and is an abnormality frequently encountered in making periodic physical examinations. A great deal is known about its effects but little about its cause. Indeed, the knowledge of its cause is so limited that it may be compared to the knowledge of the cause of diabetes before the demonstration of its basis in pancreatic dysfunction. With this limitation of knowledge, even when hypertension is recognized early little can be done about controlling it and practically nothing about curing it. It causes such a considerable proportion of heart disease that when an understanding of hypertension has been achieved and translated into effectual preventive measures a most important step in the control of heart disease will have been taken.

The situation in regard to acute rheumatic fever is slightly more encouraging. The problem is under attack from many sides and it may be hoped with some optimism that soon there will be satisfactory means of prevention and cure. The means now used are partially effective in prolonging the duration and improving the quality of life, but they certainly do not constitute a solution of the problem. Prevention of individual cases of rheumatic heart disease is of more value to the individual than prevention of most other types because the relative youth of the patients means the saving of more years of life.

Against syphilis much more potent weapons are available and there is reason to believe that the early, prolonged and intelligent treatment of syphilis by the means at hand would result in a fall in the incidence of syphilitic heart disease. This fall will be brought about, not by people interested primarily in heart disease but by those who are treating early syphilis well.

Recognition of limitations in controlling these conditions makes it clear that in the present state of medical

* From the Medical Clinic of the Vanderbilt University Hospital.
* Read before the Section on Practice of Medicine at the Eighty-First Annual Session of the American Medical Association, Detroit, June 25, 1930.

1. Osler, William: Malignant Endocarditis, Lancet **1**: 415, 1885.

knowledge it is not possible to make an effective attack on heart disease as a whole by preventing its causes. It is, then, urgently necessary to encourage investigation into the problems of its causes: hypertension, acute rheumatic fever and syphilis. Meanwhile physicians must do what they can by the application of what is known about them now.

Once heart disease due to these or other causes is established, the rate of its advance may be retarded by wise care. With the best care in the world, however, heart disease of these types will in the long run usually eventuate in heart failure. It is, of course, heart failure which actually results in the death of the patient. This being so, the second method of attack on the problem of heart disease must be the postponement or successful treatment of heart failure.

By heart failure is meant a group of symptoms and signs dependent on congestion in various parts of the body. These symptoms and signs usually include dyspnea (which may be continuous or of the paroxysmal type), engorgement of the neck veins, distention of the liver, peripheral edema and pulmonary edema, and often collections of fluid in the serous cavities. From this discussion are excluded the cases of acute circulatory failure such as are seen in infectious diseases or after hemorrhage. This is a different thing and based on different mechanisms.

The development of the picture of congestive heart failure carries with it an extremely grave prognosis. Complete recovery from the condition is practically unknown and response to treatment, while often striking, is only temporary.

The average duration of life after the onset of the symptoms of congestive cardiac failure is unpleasantly brief. According to Romberg,[2] who studied a large group of poor people with heart failure, the duration of life after the onset of severe symptoms was six months. I have recently analyzed the histories of twenty-five patients who died of heart failure in the Vanderbilt University Hospital and who came to autopsy. The limitation of the study to those patients subjected to postmortem examination made it possible to eliminate cases in which conditions outside the heart were important factors in the patient's death. The average duration of life in these patients after the onset of definite failure was seventeen months. This term is much less than the average duration even of certain incurable and malignant conditions, such as malignant lymphoma. It is, of course, often possible to adjust the patient's life to his disease so that he may survive with reasonable comfort for years, but even under the best conditions when a patient has once developed the classic evidences of what is called heart failure he is sentenced to death and the fatal event is seldom long postponed. Even when the fatal event is postponed, the change usually represents a commutation of sentence to life imprisonment rather than a pardon.

It is important to decide the point as to whether this is necessarily the case. Does heart failure represent an irreversible end stage, is it a road that leads inevitably and quickly to the gate of death, or is it the result of changes which physicians may learn to control and to reverse?

At the outset, it may be admitted that, in spite of the gloomy average, there are people with heart failure who survive for some years. In this series of twenty-five cases, the extremes of duration were three weeks and seven years, and many of the patients had months of comfortable activity after a classic first attack of heart failure. This would indicate that there are at least some stages in which the processes (whatever they are) are reversible and this observation lends the possibility of success to the search for a controllable abnormality as the basis of failure of the heart.

It is first necessary to say a word about the possibility that heart failure is due to lesions or functional disturbances outside the heart itself; in the nervous system, for example, or in the peripheral circulation. It is not to be doubted that an initial attack of heart failure produces changes in the body apart from the heart itself and that some of these changes favor the continuation or recurrence of the manifestations of failure. This is another way of saying that heart failure is the first step of a vicious cycle which, once established, tends to progress. Harrison and Pilcher,[3] for example, have shown that edema not only increases the work of the heart, certainly a bad thing for a failing organ, but leads to a loss of buffers from the body muscles and thus reduces the factors that tend to protect the heart from overwork. Their work on edema has been confirmed by the researches of Barker and Kirk.[4] Eppinger, Kisch and Schwarz[5] have observed changes which they believe indicate a difficulty in the resynthesis of lactic acid in the general musculature. This type of change is certainly important but must, in the beginning, be secondary to a primary fault in the heart itself. It is the nature of that primary fault in the heart with which we are now concerned.

It is true that most cases of congestive heart failure follow long-standing cardiac overwork, particularly overwork in the form of valvular disease or hypertension. Neither the severity nor the duration of the overwork, however, coincides with the severity or with the time of onset of failure, so that it is necessary to seek a factor or factors beside the overload itself. Some factors that accelerate the progression of heart failure are those that increase the load: anemia, chronic pulmonary disease, pregnancy; in other cases failure may progress in spite of an actual diminution of the hypertension originally responsible for it and in spite of a life carried on at a low level of activity.

For about a century, beginning with Laënnec, emphasis has been placed on abnormality of the cardiac muscle as an important immediate cause of heart failure. A great clinician, William Stokes[6] of Dublin, observed in 1854, "It will be seen that, while the diagnosis of valvular disease depends upon the existence and appreciation of certain physical signs, the questions of prognosis and treatment depend upon the condition of the muscular portions of the heart." If it be granted, for the sake of our analysis, that cardiac failure depends on a myocardial abnormality, then the next question is the nature of the myocardial defect. The answer to this question should determine both the possibility and the method of treating the myocardial defect. There is no lack of suggestions regarding the

2. Romberg, Ernst: Lehrbuch der Krankheiten des Herzens und der Blutgefässe, Stuttgart, 1925, p. 197.

3. Harrison, T. R., and Pilcher, Cobb: Studies in Congestive Heart Failure: I. The Effect of Edema on Oxygen Utilization, J. Clin. Investigation 8: 259 (Feb.) 1930; II. The Respiratory Exchange During and After Exercise, ibid., April, p. 291.

4. Barker, M. H., and Kirk, E. J.: Experimental Edema (Nephrosis) in Dogs in Relation to Edema of Renal Origin in Patients, Arch. Int. Med. 45: 319 (March) 1930.

5. Eppinger, Hans; Kisch, Franz; and Schwarz, Heinrich: Das Versagen des Kreislaufes, Berlin, 1927.

6. Stokes, William: Diseases of the Heart and Aorta, Philadelphia, 1854.

nature of the abnormality in the muscle. Three familiar hypotheses are as follows:

1. The basis of heart failure is an actual destructive lesion of myocardial tissue, either grossly or microscopically recognizable.
2. The basis of failure is an interference with the blood supply by obstructive lesions of the vessels of the coronary circulation.
3. Lesions of the specialized conduction tissues may lead to abnormal function and so to failure.

While it is clear that all these types of lesions may play a part, and occasionally (usually in old people) an important one, in the development of heart failure, it is equally clear that no one of them nor any combination of them accounts for a large proportion of the cases coming to autopsy. The classic observations of Aschoff and Tawara [7] and the recent book by Cabot [8] emphasize the fact that in most cases failure of the heart is not to be explained on the basis of anatomically demonstrable lesions in the muscle. It is fortunate that this is so, for such anatomically demonstrable lesions are almost of necessity permanent and often, indeed, progressive. If such lesions are the only basis of failure, the problem of its treatment is probably quite insoluble. But if one agrees that the myocardium is at fault and yet can assign no structural abnormality as the basis of its failure, one may turn the attention to functional changes. Here there is more ground for hope because functional changes are often reversible. What functional alteration in the muscle is to be blamed is not known. Certain reversible changes are known, however, which are definitely associated with some cases of heart failure.

It has been observed for some years by Zondek [9] and by Fahr [10] that certain cases of heart failure are associated with myxedema and are relieved of the cardiac symptoms by the administration of thyroid substance. An even better example is to be found in the cases of heart failure observed in association with beriberi by Scott and Herrmann,[11] by Aalsmeer and Wenckebach,[12] and by Keefer.[13] In these patients the manifestations of heart failure disappeared after the administration of vitamin B. These conditions illustrate a myocardial functional change severe enough to be responsible for heart failure and yet reversible by simple treatment. The hope that animates many workers now is that some functional change like these will prove to be an important factor in the heart failure associated with valvular disease and with hypertension. Work is in progress in many laboratories and clinics directed toward a solution of this problem. In Vienna, Kutschera-Aichbergen [14] has observed a fall in calcium and a diminution in lipoids in the heart muscle of patients dead of failure. In Nashville, Harrison, Calhoun and Pilcher [15] have demonstrated in such cases a diminution of the potassium content of the heart and have brought experimental evidence which relates this fall to fatigue of the muscle. The invariable association of cardiac hypertrophy with failure has been commented on by Christian.[16] It has been suggested that failure may have to do with difficulty of diffusion through enlarged muscle fibers. Such studies as these promise increased understanding of and therefore increased ability to control the changes in the heart muscle which lead to the development of heart failure.

Heart failure usually occurs in successive attacks which come closer and closer together and respond less and less to digitalis and other therapeutic means. The functional changes in the heart muscle may well become irreversible as the condition progresses, but there is reasonable ground for hope that in the early days or weeks of failure they are reversible. The problem is, then, to seek out the change or changes in the heart muscle that lead to failure, in the hope of being able to reverse them.

My purpose in this paper has been to point out the limitation of the present-day methods of the treatment and prevention of heart disease, to establish the point that this limitation is due to ignorance of certain fundamental factors involved, and to suggest certain promising lines of investigation along which useful advances may be made.

7. Aschoff, L., and Tawara, S.: Die heutige Lehre von den pathologisch-anatomischen Grundlagen der Herzschwäche, Jena, 1906.
8. Cabot, R. C.: Facts on the Heart, Philadelphia, W. B. Saunders Company, 1926.
9. Zondek, Hermann: Das Myxödemherz, München. med. Wchnschr. **65**: 1180, 1918; **66**:681, 1919.
10. Fahr, George: Myxedema Heart, Am. Heart J. **3**: 14 (Oct.) 1927.
11. Scott, L. C., and Herrmann, George R.: Beriberi ("Maladie des Jambes") in Louisiana, with Especial Reference to Cardiac Manifestations, J. A. M. A. **90**: 2083 (June 30) 1928.
12. Aalsmeer, W. C., and Wenckebach, K. F.: Herz und Kreislauf bei der Beri-beri-Krankheit, Wien. Arch. f. inn. Med. **16**: 193 (Jan.) 1929.
13. Keefer, C. S.: The Beriberi Heart, Arch. Int. Med. **45**: 1 (Jan.) 1930.
14. Kutschera-Aichbergen, Hans: Ueber Herzschwäche, Wien. Arch. f. inn. Med. **28**: 209 (Oct.) 1929.
15. Harrison, T. R.; Calhoun, J. A., and Pilcher, Cobb: The Nature and Treatment of Cardiac Fatigue, South. M. J. **23**: 381 (May) 1930.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. HERRICK AND BURWELL

DR. R. H. HALSEY, New York: Heart disease is the greatest problem of today from the standpoint of mortality. Heart disease comprises in morbidity from 5 to 8 per cent of the cases that are taken care of every day. All reportable diseases as now reported comprise only 3 per cent; therefore the importance that heart disease bears to the whole problem of morbidity is obvious. An endeavor should be made to get the community heart-conscious and the profession heart-minded for the reason that heart disease is not one disease but a conglomeration of many. In mortality statistics, 7 per cent of the deaths are grouped under three headings and the remainder or, as they are called, "other diseases," of the heart comprise 90 per cent. In other words, etiology is left entirely out of the consideration of what causes death, and as causes of death such things as mitral stenosis or aortic insufficiency, with which many persons live for many years, are put down. A few years ago I sent a questionnaire to all the hospitals of the state, asking three questions: Of those who died in those hospitals, how many died of rheumatic heart disease, how many died of syphilis, and how many died of other diseases of the heart? The replies indicated that out of 30,000 deaths only 2,000 could be accounted for on the basis of etiology. I went to some of the hospitals of New York and asked for the last ten autopsies and then looked for the etiology as stated by the pathologist and the etiology as stated by the clinician. I found that the clinician does not think of etiology in 70 per cent of the cases. The pathologist thinks of etiology in 60 per cent of his cases of heart disease; in other words, in 40 per cent of the cases he does not consider etiology. In that study it was found that, in 1922, 34 per cent of the death certificates assigned the cause of death to chronic myocarditis, while in 1926 they assigned death in 48 per cent of the cases to that cause. That is, the profession became much more myocarditis-minded.

DR. EMANUEL LIBMAN, New York: Clear as the results of any one investigator may be, it is important that a group come together to clear up their differences. There is even no agreement as to what constitutes a normal valve. Bayne-Jones had found vessels in three of fourteen cases. Dr. Gross in his earliest studies rarely had a positive finding. Later he and Kugel found them in 17 of 85 hearts, and still later Ritter, Kugel and Gross reported an incidence of only 2 per cent in

16. Christian, H. A.: The Diagnosis and Treatment of Diseases of the Heart, Oxford Monographs **3**.

700 hearts. Dr. Gross tells me that he now finds it necessary to adopt still stricter criteria and believes that some of the positive valves were not normal. He believes that some of the reported figures are too high because the muscular wedge is incorrectly considered part of the valve. The important fact is that, whether because of previous disease or not, vessels are present in the valves of a number of individuals, and the relationship of this to the incidence of endocarditis should be ascertained. In taking up this consideration, it is essential to understand an important difference between the conditions that go by the names of rheumatic endocarditis and bacterial endocarditis. Dr. Gross and his associates, particularly Dr. M. A. Kugel and Dr. E. Z. Epstein, have found that rheumatic endocarditis, in contradistinction to bacterial endocarditis, begins in the musculofibrous junction. I shall therefore confine my discussion to bacterial endocarditis and particularly to the subacute form. I believe that it can be taken for granted that the condition can be established and kept up by means of embolism into the valve, and that lesions may also be developed by contact. More must be learned regarding the mechanism suggested by Grant, that the important factor is deposition of thrombotic deposits on rough places and clefts in the valves and their later infection by way of the blood current. To my mind, increased tension is a most important consideration. This would explain the increased incidence of the disease and involvement of the aortic valve during the Great War. The great tendency for bicuspid aortic valves to be involved points the same way. A study of the incidence of vessels in bicuspid valves not the seat of bacterial endocarditis is most essential. If vessels were found in greater frequency in them than in the usual tricuspid aortic valves, a crucial decision could be made. Of fundamental importance is the reduced resistance of the individual and the presence of focal infections. Here lies the main solution of the problem under consideration.

Dr. Fred M. Smith, Iowa City: The coronary arteries were at first regarded as strictly end arteries. At a later stage, opinion varied. Investigation has shown that there is usually extensive collateral circulation. There is still a diversity of opinion concerning the incidence of blood vessels in the valves of the heart. I have never seen any reason why these structures should not be provided with a circulation. The general appearance of many of these vessels would indicate that they were originally present. I question whether they are concerned with the incidence of endocarditis.

Dr. S. Calvin Smith, Philadelphia: Concerning the influence of infections on heart failure, we have all seen toxic patients make brilliant recoveries following the successful treatment of local or systemic infections; the younger the patient and the more recent the symptoms of heart failure, the better are the prospects of relief. But there is no uniformity in results. I am taking less and less stock in the idea that heart failure is precipitated by bacteria or toxins, for, certainly, altered chemistry must first transpire in any bodily tissue before that tissue will allow itself to harbor germs; and it might well be that this antecedent perversion of bodily chemistry also affects the heart, producing primary heart failure in a patient, which failure is not at all due to the secondary presence of remote bacteria. I take exception to the statement that heart failure occurs only in enlarged hearts. Heart failure and heart enlargement need not necessarily be associated in the same patient. I have seen hearts fail that were small and undeveloped; and enlarged hearts, on the other hand, may carry on efficiently for years without failing until the patient eventually succumbs from some other cause. Dr. Burwell mentioned "the difficulty of diffusion through enlarged muscle fibers" as a likely cause of heart failure. Need the muscle fibers necessarily be enlarged to encounter difficulty in diffusion? Could not heart failure also result from a paucity or impoverishment or imbalance of those substances that are to be diffused through heart muscle?

Experience permits the hope that the problem of untimely heart failure, in its earlier stages, will some day be solved through an understanding of heart tissue chemistry. Experience suggests that calcium may early abort some cases of auricular fibrillation; magnesium has seemed oddly effective with occasional patients who have recently developed multiple premature systoles; barium has apparently benefited isolated instances of heart block. In sudden heart failure that produced the abnormality of sharply inverted T waves in an electrocardiogram, some such T waves have turned astonishingly upright following a prompt saturating of the patient with calcium, sodium and potassium. Furthermore, ailing patients with high blood pressure readings, who have been on restricted diets for months, may take a new lease on life when their diet is enlarged —thus perhaps permitting the heart to secure from the more comprehensive dietary those substances which it needed for a physiologic diffusion through heart fibers. And may it not be that, among those heart patients who derive surprising benefits from sojourns amid strange scenes, those benefits are due, in part, to a refurbishment from a new dining table of those as yet unknown substances that diffuse themselves through heart muscle fibers? Indeed, may not the success of some spa-treated heart failure patients be accounted for by the chemical replacement of substances from the spa waters?

Dr. Wallace M. Yater, Washington, D. C.: As one of those particularly interested in the fundamental nature of cardiac failure I should like to emphasize the fact that in a great majority of cases of cardiac failure, except those due to acute myocarditis, or when coronary sclerosis is an important factor, there is practically no microscopic evidence which will account for the failure. Those changes which are found in the nature of fatty degeneration and brown atrophy are undoubtedly late changes. The fundamental nature of cardiac failure of course goes back to cardiac fatigue due to a long continued mechanical strain, whether that strain is due to valvular disease or to increased peripheral resistance. The pathologist has done all that he can to help in the determination of the cause of this fatigue and now it is necessary to turn more to other fundamental sciences, physiology and biochemistry particularly. The main difficulties in the past in the use of these sciences have been that a valvular disease or hypertension could not be reproduced experimentally in animals, and also that chemists have been unable to devise methods whereby small enough quantities of heart muscle could be taken for study so that the efficiency of the heart would not be impaired. Recently Dr. Osterberg of the Mayo Foundation has suggested a microchemical method for the quantitative determination of very small amounts of glycogen in as little as 10 mg. of tissue, so that now there is a way at least to study glycogen metabolism in the heart chemically, and we are endeavoring at Georgetown University to establish a method whereby we can determine by biopsy specimens just what is going on in the dog's heart under varying conditions of physiologic and abnormal activity.

Dr. C. Sidney Burwell, Nashville, Tenn.: Dr. Yater's point with regard to the possible involvement of the dextrose metabolism in fatigue of the heart is extremely well taken. The chief point which I wish to make is that such must be made for all sorts of functional disturbances in the heart muscle. In other words, the statement that heart failure is associated with fatigue of the heart is not sufficient. An attempt must be made to define what is meant by "fatigue," and if this can be defined, something may be done about it.

The Food Man Chooses.—Man's need for food is the same the world over and it must be guided by science and not by feelings. Primitive savages, far from being happy and healthy, are often but struggling for existence. The desire for particular kinds of food was a principal cause of man's migrations, while the food he chose did much to mold his character. Fish eaters from their seaside homes were led to explore the ocean and reaped courage and loved peace and quietness, while the meat eater became the oppressor or ruler, an example of which remains today, the Masai and the Kikuyu. It is shown that the best dietaries of England were in vogue during the seventeenth century, after which the rise of the factory-made products produced gradual deterioration. Similar changes are occurring throughout the tropics with serious results. These are retrograde steps, for by comparing our own with the dietaries of Egypt, Nubia, the Hebrews and other nations, we come to the conclusion that theirs were the better balanced and more adequate.—Leitch, J. N.: Dietetics in Warm Climates, London, Harrison and Sons, Ltd., 1930.

ASYMPTOMATIC NEUROSYPHILIS

VI. THE PROGNOSIS OF EARLY AND LATE ASYMPTOMATIC NEUROSYPHILIS *

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Since the demonstration twenty-seven years ago by Ravaut [1] of the fact that the spinal fluid was abnormal in a high proportion of patients with untreated early syphilis, the significance of such abnormalities has been the source of much speculation and debate. On the one hand, it has been contended that these cytobiologic changes were usually transitory, that they tended to disappear spontaneously, and that they were of little prognostic importance. On the other, it is felt that they represent the actual objective evidence of invasion of the nervous system by the spirochete, and that they are the forerunners of clinical neuraxis involvement in later years. So far, little careful work on this major problem has appeared, most of the published papers being based on opinion alone or on the study, often inadequate, of a small number of patients.

We present evidence, from the course of the disease, in 123 well followed and studied patients, which supports the view that spinal fluid abnormalities in patients with early or late syphilis who show no clinical evidence of neuraxis involvement (asymptomatic neurosyphilis) are of grave prognostic import. The space limitations of this paper prevent a discussion of any but the major issue. A subsequent communication will provide further detailed analysis, with a study of collateral factors involved in the transition of asymptomatic into clinical neurosyphilis, such as race, sex, age, duration of infection and influence of treatment, and will also include a survey of the literature.

In a series of papers from this clinic on the subject of asymptomatic neurosyphilis,[2] certain conclusions have been drawn which must be briefly restated. Invasion of the nervous system probably occurs in the majority of all patients with syphilis, and unless the course of the disease is influenced from without (by treatment), this takes place in most instances within the first year after infection. The ability of the invading organisms to produce clinical neurosyphilis probably depends on the defense mechanism of the individual patient. Involvement of the nervous system, when present, can readily be detected in untreated or treated patients by means of routine laboratory examination of the spinal fluid, though in a few instances spirochetes may actually be present in a spinal fluid that is otherwise normal. Abnormalities in the fluid are almost certainly evidence of actual anatomic damage to the nervous system by the spirochete. If the neuraxis escapes invasion at the time of the generalization of the virus during early syphilis, it will not be invaded at a subsequent date (in treated patients) unless a second or later period of general dissemination of organisms and spirochetemia occurs, or unless by direct extension from a neighboring syphilitic focus, as in gummatous osteitis of the skull. Abnormalities in the spinal fluids of patients with late syphilis (excepting neurosyphilis) represent a persistence of changes inaugurated in the early stages of the infection; their lessened incidence in late as compared with early syphilis is due to the fact that by this time a number of patients have developed frank clinical neurosyphilis.

For convenience in study, patients with early or late asymptomatic neurosyphilis may be divided into three groups, on the basis of the character of the changes in the spinal fluid:[3] group 1 includes patients with minimal serologic abnormalities (increased cell count and globulin content, with other tests negative); group 3, those with maximal changes (the paretic formula); group 2, those with fluids of an intermediate type. This classification is adhered to in this paper.

The material available for analysis as to the outcome is shown in table 1. Fifty-five patients whose admission diagnosis was primary or secondary (early) syphilis and sixty-eight with various types of late syphilis, mostly latent, are included. The original examination of the spinal fluid which permitted the diagnosis of asymptomatic neurosyphilis was made either on admission or more frequently shortly after treatment was begun, though in a few instances it was done after a lapse of from one to three years. In such cases the patients were as free from neurologic symptoms and signs as on admission. The absence of clinical evidence of neurosyphilis was demonstrated by a neurologic examination (including an ophthalmoscopic examination) as part of the general physical survey. However, 22 per cent of the patients complained on admission or at the time of spinal puncture of symptoms possibly referable to the nervous system, such as headache, insomnia, nervousness, "rheumatic" pains and weakness; while 28 per cent showed minor neurologic abnormalities, such as dilated, contracted, slightly unequal or irregular pupils, sluggish pupillary light reaction, or slight to moderate exaggeration, sluggishness, or inequality of the reflexes. Careful sensory examinations were not done. In no case was a clinical diagnosis of neurosyphilis permissible at the time of examination of the spinal fluid. The minor symptoms

TABLE 1.—*Material of Study*

Admission Diagnosis, Type of Syphilis	Total Cases	Spinal Fluid Falls in Group		
		1	2	3
Early (primary or secondary)	55	6	33	16
Latent (duration more than 2 years)	52	5	30	17
Late: skin, mucosal or bone lesions	11	3	6	2
Late: visceral (cardiovascular or hepatic)	5	..	4	1
Total	123	14	73	36

* From the Syphilis Division of the Medical Clinic, the Johns Hopkins Hospital.

* This investigation has been supported by a grant from the Committee on Research in Syphilis, Inc.

* Read before the Section on Dermatology and Syphilology at the Eighty-First Annual Session of the American Medical Association, Detroit, June 25, 1930.

1. Ravaut, P.: Le liquide cephalo-rachidien des syphilitiques en période secondaire, Ann. de dermat. et syph. **4**: 537, 1903.

2. Moore, J. E.: Studies in Asymptomatic Neurosyphilis: II. The Classification, Treatment and Prognosis of Early Asymptomatic Neurosyphilis, Bull. Johns Hopkins Hosp. **33**: 231 (July) 1922; III: The Apparent Influence of Pregnancy on the Incidence of Neurosyphilis in Women, Arch. Int. Med. **30**: 548 (Nov.) 1922. Moore, J. E., and Faupel, M.: Studies in Asymptomatic Neurosyphilis: V. A Comparison of Early and Late Asymptomatic Neurosyphilis, Arch. Dermat. & Syph. **18**: 99 (July) 1928.

3. The spinal fluid of practically all patients in this series has been examined as to cell count, globulin (Pandy's reaction), Wassermann test titered from 0.1 to 1.0 cc. in both water bath and icebox, and colloidal mastic test. No attention has been paid to alterations in pressure, and no emphasis laid on a cell count of less than 10, on a trace of globulin as an isolated finding, or on a colloidal curve showing a reading in all tubes of less than 3. We believe such minor changes to be occasionally present in normal individuals, and often to be due to technical error. Our exclusion of such cases from the classification of asymptomatic neurosyphilis accounts for the discrepancy in our figures and those, for example, of Ravaut or Dreyfus, who find from 60 to 80 per cent of abnormal fluids in early syphilis. A detailed description of the criteria of our groups 1, 2 and 3 is given in the papers named in footnote 2.

and signs detailed may occur in many other conditions than neurosyphilis, or even in normal individuals; and, while their presence has been noted, they have not been regarded as invalidating the diagnosis of asymptomatic neurosyphilis.

The spinal fluid having been found to be positive, the patients were treated in various ways and for varying intervals of time, a detailed discussion of which must await the next paper of this series. Efforts have been made to follow them over considerable periods of time with repeated neurologic and spinal fluid studies; and with a few exceptions (twenty-four cases [4]), these data are available for the whole series over periods of observation ranging from one to nineteen years, and averaging seven years. In many cases, spinal fluid studies and physical and neurologic examinations have been repeated several times over a period of years.

The outcome in early asymptomatic neurosyphilis is shown in table 2, and in late asymptomatic neurosyphilis in table 3. The two series are closely parallel in size, even to the subclassification into spinal fluid groups, and the outcome is closely similar whether the spinal fluid changes were discovered early or late.

TABLE 2.—*Outcome in Early Asymptomatic Neurosyphilis*

Spinal Fluid in Group	Total Cases	Clinically and Serologically Well	Developed Clinical Neurosyphilis (Definite)	Developed Neurosyphilis (Questionable)
1	6	3	..	3
2	33	23	3	7
3	16	4	4	8

TABLE 3.—*Outcome in Late Asymptomatic Neurosyphilis*

Spinal Fluid in Group	Total Cases	Clinically and Serologically Well	Developed Clinical Neurosyphilis (Definite)	Developed Neurosyphilis (Questionable)
1	8	3	2	3
2	40	27	2	11
3	20	6	8	6

The subheadings of these two tables need explanation. The patient is stated to be clinically and serologically well only when the final neurologic examination showed no abnormalities (or no minor changes which were not present at the time of the original examination) and the spinal fluid was completely negative at an interval ranging from one to eleven years after cessation of all treatment. He is classified as having clinical neurosyphilis if, at any time during the period of observation, he developed objective neurologic or psychiatric changes which make the diagnosis quite obvious. Under the heading "neurosyphilis questionable" are grouped those patients in whom objective neurologic signs, suggestive but not diagnostic of neurosyphilis, had appeared when they had previously been specifically noted as absent; or when the spinal fluid was still positive (usually unimproved or worse) after treatment though neurologic changes were absent or data regarding them lacking.

The number of patients with group 1 spinal fluids (pleocytosis and globulin increase only) is small, and the fact that two of fourteen patients have developed clinical neurosyphilis and that in six others the present status is questionable does not give a true picture of the ultimate fate of patients with minimal fluid changes. Two factors account for this: the fact that puncture was usually done after some treatment had been given, thus making it almost certain that a number of such cases were missed, because cleared up by treatment; and the fact that unfortunately cell counts have been omitted or lost in many cases studied. Were our material large enough to include all patients who at any time during the course of the infection presented these minimal fluid changes, it is certain that the incidence of clinical neurosyphilis would be much lower. In many instances, we have observed that these slight abnormalities disappear rapidly under treatment, though we have omitted such patients from consideration in this series because they have been lost sight of and their ultimate fate is unknown. It is, however, permissible to say that such minimal fluid changes are not necessarily fugitive in nature and of no significance for the future. One patient of this group developed epilepsy at the age of 40 with pupillary and reflex changes indicative of neurosyphilis four years after the completion of inadequate treatment, the spinal fluid being then negative except for the persistence of a moderate amount of globulin. Another died of brain gumma (proved at necropsy) four months after admission, though the admission examination had shown no neurologic abnormalities other than sluggishly reacting pupils. In one patient of this group, the spinal fluid was observed to become spontaneously negative in the absence of treatment, though in two others it was unchanged and in four it became worse in spite of considerable amounts of treatment. The average duration of treatment given to the patients of this group now classified as well was twenty-seven months, while for the patients whose results were certainly or questionably poor it was nineteen months. The average period of observation was six years.

The larger number of patients included in groups 2 and 3 make the results more convincing. Of seventy-three patients with group 2 fluids, 68 per cent are now regarded as well, 6 per cent have developed clinical neurosyphilis, and in 28 per cent the present status is questionable. Two patients in this group, both found to have group 2 fluids shortly after treatment for early syphilis had been started, have developed dementia paralytica, in one case six and in the other eight years after infection. Another has developed early tabes dorsalis, and two diffuse meningovascular neurosyphilis. On the other hand, a surprisingly large number of patients are well after treatment averaging twenty-two months in duration, and over an average period of observation of six years. Two patients of this group have even acquired a probable second infection with syphilis, which is strong presumptive evidence of radical cure of the first infection in spite of the neuraxis involvement. We have observed no instances of spontaneous regression of the spinal fluid to negative in this group; on the contrary, we have repeatedly been impressed with the fact that when puncture is again done in such patients after a lapse following inadequate treatment, the fluid changes are invariably either unimproved or more usually worse.

That the paretic formula in the spinal fluid, even in early syphilis, is of extremely grave prognostic significance is shown by the outcome in the thirty-six cases falling into group 3. Here, even in the relatively brief average period of observation of eight years,

4. These twenty-four patients include six in whom final neurologic examinations are available but repeat spinal fluid examinations are lacking; and eighteen in whom the reverse is true. In all other patients, statements as to the ultimate outcome are based on reexamination from both clinical and laboratory standpoints (blood Wassermann and spinal fluid tests) at the end of the period of observation.

only 27 per cent of the patients can be regarded as clinically and serologically well. Thirty-three per cent (twelve patients) have developed clinical neurosyphilis, and in 40 per cent the present status is questionable. No less than seven patients in this small group have already developed dementia paralytica, and three tabes. The gravity of the situation is further exemplified by the fact that the average duration of treatment necessary to accomplish a satisfactory clinical and laboratory result in this group was nearly twice as long—forty

TABLE 4.—*Types of Clinical Neurosyphilis Observed as Sequelae of Asymptomatic Neurosyphilis*

Admission Diagnosis and Group of Asymptomatic Neurosyphilis		Developed Clinical Neurosyphilis, Type						
		Total Cases	Dementia Paralytica	Tabes Dorsalis	Diffuse Meningovascular	Vascular	Epilepsy	Died, Neurosyphilis
Early	1	..	..	..	..	..	..	..
	2	3	2	..	1	..	..	..
	3	4	2	1	1	..	..	1
Late	1	2	..	..	..	1	1	1
	2	2	..	1	1	..	..	..
	3	8	5	2	..	1	..	3

months—as in patients with groups 1 or 2 fluids; and in many instances, tryparsamide or fever therapy or both, rarely resorted to in patients of the other two groups, were necessary.

In table 4 may be found a summary of the clinical types of neurosyphilis observed to develop in patients with early and late syphilis, further subdivided as to spinal fluid groups. It is a curious fact that parenchymatous neurosyphilis (dementia paralytica and tabes) was by far the most frequent type of neuraxis involvement observed (thirteen of nineteen cases) though as one sees the manifestations of neurosyphilis on the admission of untreated or badly treated patients, the meningovascular type predominates in the proportion of 2 to 1. This can hardly be due to any other cause than that the large majority of patients in this series were well and intensively treated, comparatively speaking, after the discovery of the spinal fluid changes; and that such intensive treatment is effective in preventing the development of meningovascular, but not of parenchymatous, neurosyphilis. This table further brings out the fact that, while one cannot assure a patient whose spinal fluid is of the group 2 type that he will not develop tabes or dementia paralytica, his chance of doing so is markedly less than when his original spinal fluid changes are maximal in degree (group 3). The opinions we have previously expressed,[2] that the foundations of dementia paralytica and tabes are laid in the early days of the infection and that patients with group 3 (paretic formula) fluids are candidates for parenchymatous neurosyphilis, seem amply confirmed by these figures. Of the twelve patients with group 3 fluids who subsequently developed neurosyphilis, the type of involvement was parenchymatous in no less than ten, of whom three were admitted with early syphilis. The point is worth mentioning that, to be of real prognostic value, a spinal fluid examination must include a quantitatively titered Wassermann reaction and a colloidal test, since the presence or absence of the paretic formula cannot be detected without them. The omission of these two tests invalidates much published work, especially from abroad.

We feel that the figures we have given as to the outcome of asymptomatic neurosyphilis, while convincing enough, nevertheless present the matter in its most favorable light because of the relatively short period of observation possible in most instances. Keeping in mind the facts that routine spinal fluid examinations have been in use in our clinic for a little less than ten years, and that the average interval between infection and the development of parenchymatous neurosyphilis, for example, is from twelve to fifteen years, it is obvious that further observation will be necessary to settle the fate of most of our patients now classed as questionable. This is amply illustrated by table 5, in which is shown the basis of the "questionable" classification. Of thirty-eight cases so classified, the spinal fluid at the last examination, usually after considerable amount of treatment, was still positive (usually unimproved or worse) in thirty-one. Nine of these thirty-one have developed since admission minor neurologic changes suggestive, but not diagnostic, of neurosyphilis; in twelve, no such objective changes have appeared; and in ten, recent neurologic examinations have not been done. Seven patients are classified as "status questionable" on the basis of the appearance of minor objective neurologic signs, though in six of these the spinal fluid is now normal (in one case spinal fluid data are lacking). It seems too much to hope that many of the thirty-one patients whose fluids are still positive will escape clinical neurosyphilis.

Eleven patients of this series are dead. Four died of dementia paralytica, one of cerebral gumma. One patient with a group 2 fluid died at the age of 38 of a cerebral vascular accident, but since he had a severe hypertension, and since a necropsy was not obtained, he is classified with the questionable group. Two died from cardiovascular syphilis, one of whom had definite signs of tabes before death. Three have died of causes unrelated to syphilis, of whom one had developed internal ear deafness (cochlear nerve paralysis) as clinical evidence of neurosyphilis before death.

Since we have laid so much stress on the grave prognostic import of asymptomatic neurosyphilis, the

TABLE 5.—*Basis of the Diagnosis of "Questionable Neurosyphilis"*

Original Spinal Fluid Falls in Group	Total Cases	Developed Minor Neurologic Changes Suggestive, but Not Diagnostic, of Neurosyphilis			Cerebrospinal Fluid Still Positive, Usually Unimproved or Worse After Treatment or Observation	
		Cerebrospinal Fluid Became Negative	Cerebrospinal Fluid Still Positive, Usually Unimproved or Worse	Cerebrospinal Fluid No Data	No Clinical Evidence of Neurosyphilis	Clinical Data Lacking
1	6	1	..	..	3	2
2	18	4	6	..	4	4
3	14	1	3	1	5	4

question will inevitably be raised as to the prognostic significance of negative spinal fluid observations in early and late syphilis. In general, it may be stated that if the spinal fluid, examined at an appropriate time in a patient undergoing treatment for early syphilis, is negative, and if the patient completes modern treatment requirements with no clinical or blood Wassermann reaction relapses, reexaminations of the fluid at subsequent dates will be negative; and, excepting the possibility of a more or less purely vascular neurosyphilis, the development of clinical neurosyphilis, especially of the parenchymatous type, is extremely unlikely. In late syphilis, even the quali-

fications as to treatment and the time of spinal puncture are unnecessary; a negative fluid will remain negative and, with rare exceptions, the patient will not develop neurosyphilis. Data supporting these statements will be provided in a separate communication.

SUMMARY AND CONCLUSIONS

1. Data regarding the outcome of 123 patients with asymptomatic neurosyphilis (including 55 whose admission diagnosis was early and 68 late syphilis) observed over an average period of seven years are presented. Conclusions are based on repeated clinical and spinal fluid reexaminations.

2. The patients are classified in three groups (1, 2 and 3) on the basis of the intensity of the spinal fluid changes.

3. Spontaneous regression to normal of positive spinal fluid observations of any degree of intensity is a rare phenomenon.

4. Of 14 patients with group 1 spinal fluids, 6 are clinically and serologically well, 2 have developed clinical neurosyphilis and in 6 the present status is questionable.

5. Of 73 patients with group 2 fluids, 50 are clinically and serologically well, 5 have developed clinical neurosyphilis (of whom 2 developed dementia paralytica and 1 tabes), and in 18 the present status is questionable.

6. Of 36 patients with maximal (group 3) fluid changes, only 10 are well. Twelve have developed clinical neurosyphilis (of whom 7 developed dementia paralytica and three tabes), and in 14 the present status is questionable.

7. The presence of a group 3 spinal fluid, early or late in the course of syphilitic infection, is strong presumptive evidence of liability to the development of parenchymatous neurosyphilis.

8. Since the average observation period is short, it seems certain that the figures given for the incidence of clinical neurosyphilis are minimal and that from the 38 patients now classified as "status questionable" further examples will develop.

9. Eleven patients of the series are dead, of whom 5 died of neurosyphilis.

10. The presence of a positive spinal fluid in patients with early or late syphilis who show no objective neurologic abnormalities is of grave prognostic import. Generally speaking, the ultimate danger to the patient is roughly proportional to the intensity of the spinal fluid changes.

11. On the other hand, a negative spinal fluid in early or late syphilis is, subject to certain qualifications, a practical guarantee of safety for the future so far as the development of neurosyphilis is concerned.

12. These facts being true, routine spinal puncture is an indispensable part of the management of every patient with syphilis.

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ABSTRACT OF DISCUSSION

DR. UDO J. WILE, Ann Arbor, Mich.: The figures just presented are an adequate justification for the use of lumbar puncture in the early weeks of this infection, when patients are seen for the first time. The results we have obtained in our cases, extending over eighteen years, are practically identical with those that have just been presented. In 1914, Dr. Stokes and I suggested that the fate of every patient with syphilis, as affecting his central nervous system, was decided within the first few weeks of his infection. We are certain that that statement must be taken with some qualification. It should be remembered that the criteria of "normal" in the spinal fluid are entirely arbitrary. Between the arbitrary "normal" and the abnormal, which is a small gap, things may occur which cannot be detected with the present criteria of diagnosis. I differ slightly in regard to the criteria suggested here. I should like a definite distinction between invasion and involvement. Invasion of the cerebrospinal axis must be accepted as occurring in all cases. Perhaps it is best to accept the probability that in all cases of syphilis a cerebrospinal enanthem is being dealt with. Involvement of the nervous system means an entirely different thing. If involvement occurs in from 5 to 10 per cent late and in from 20 to 30 per cent early, and invasion occurs in 100 per cent, a transitory phenomenon in clinical observations must be present, which does not come to the foreground. The second point is including in this group of asymptomatic cases those cases in which headache or other abnormal conditions, including inequality of the pupils, are present. It is precisely in the group in which clinical symptoms are more than suggestive that experience tells me that cerebrospinal disease does occur. I should like to hear more from the authors as to why they include in this group cases that they regard as asymptomatic which would ordinarily be regarded as involvement and not as invasion. The last point of interest is the relation of cases that have a serious type of involvement early to the type that shows development of cerebrospinal disease late. Generally speaking, I think those cases that present severe parenchymatous changes early are those that are headed for severe disease later on.

DR. PAUL A. O'LEARY, Rochester, Minn.: I believe the majority of syphilotherapists are familiar with the fact that most of the patients with asymptomatic neurosyphilis when treated intensively obtain satisfactory serologic reversals. I make mention of this because I failed to gather from the report of Drs. Moore and Hopkins the percentage of good therapeutic results noted in their study. In my experience approximately 90 per cent of these asymptomatic cases respond favorably to treatment. One of the chief difficulties in the care of these patients is to determine when the patient with asymptomatic syphilis should no longer be classified as asymptomatic. In other words, when shall the diagnosis, for example, change to paresis sine paresi? In addition to the persistently positive spinal fluid or the frequent relapses from negative to positive, the colloidal benzoin test is a valuable prognostic index. When it has been possible to repeat the test frequently, I have found it not only more stable but also more reliable in the recognition of the paretic curve than the colloidal gold solution. In the 10 per cent who fail to show serologic response to treatment and are in the process of developing asymptomatic dementia paralytica, malaria therapy remains the outstanding therapeutic agent in my experience. The observations reported two years ago from my clinic have been substantiated by subsequent study of a larger group of similar cases. In fact, it is my belief that the ideal indication for malaria treatment is found in the patient with asymptomatic neurosyphilis who has had intensive courses of intravenous and intramuscular therapy but in whom the spinal fluid remains positive and the colloidal benzoin curve continues to be of the paretic type.

DR. JOSEPH EARLE MOORE, Baltimore: Dr. Wile has put his finger on one crux of the situation with reference to the classification of this material as asymptomatic neurosyphilis, and comments on including in this group patients who actually had syphilis and actually had neurologic signs. That was done for two reasons: first, because the symptoms of which these patients complained were symptoms of which normal individuals may complain. Headache is a common symptom; rheumatic pain; weakness, nervous irritability, insomnia, and so on are things from which all of us suffer and from which patients with negative spinal fluid as well as positive suffer particularly. We have already published a small number of figures bearing on this point and will in the future expansion of this work produce more, but we feel that it is quite impossible to make diagnoses of central nervous system syphilis on such complaints as this. The question of minor neurologic signs, including sluggish reflexes, unequal pupils and so on, are perhaps more important; but these phenomena also occur in normal individuals who do not have syphilis, and also frequently in syphi-

litic patients who do not have positive spinal fluid, so the same situation may be said to exist with reference to physical signs as with syphilis. We find ourselves unable, even with the assistance of our neurologic department, to make definite diagnosis of syphilis in a patient who comes in complaining only of headache, sleeplessness, weakness, or inability to concentrate, and such patients are excluded from a definite clinical diagnosis of central nervous system syphilis. Dr. Wile's point regarding the ultimate outcome is well taken. The point was mentioned that because a patient does not show the paretic formula early in the course of the infection he will not develop dementia paralytica; but if this is shown I think the chances of his developing dementia paralytica are much greater than if he does not show it and, conversely, he is much less likely to develop the disease if he does not show it. Dr. O'Leary asked about the percentage. In summary I may say that in group 1, of fourteen patients six are serologically and clinically well; in group 2, good results were obtained in approximately 50 per cent of the cases, while in group 3 only about 10 per cent are symptomatically well. The rest of the fluids are definitely syphilitic, emphasizing again the great importance of the paretic formula early or late in the course of the infection.

THE SEQUELAE OF BILIARY TRACT INFECTION *

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The biliary tract, composed of branching channels of various sizes, is greatly dependent for its normal well being on the free onward passage of its contents. The consequences of obstructed bile flow have to do largely with impairment of liver function. In a clinical sense, bile obstruction and infection are practically always coexistent and in nearly every case infection is the primary cause. Cholecystitis causes interference with the normal emptying of the gallbladder, and the resultant bile stasis is favorable for the formation of stones. With few exceptions infection is the primary lesion, to which is added later the complication of gallstones. Pathologic studies have shown that in the early stages the infection begins in the submucosa, as manifested by congestion, edema and round-cell infiltration. This process extends outward to involve the muscularis and serosa and inward to affect the mucous membrane. The crypts and glandular pockets become distended with bile and mucus and extend their depths farther into the wall of the gallbladder until in some cases they actually lie just beneath the peritoneal covering. Stones may form in these pockets and lead to perforation of the gallbladder. The inflammatory condition usually goes on to spontaneous resolution, but in so doing it leaves a deposit of fibrous tissue which causes the wall of the gallbladder to become thickened and less flexible. The quiescent infection in the wall of the gallbladder is prone to undergo many exacerbations, each one leaving in its wake more structural deformity and functional impairment. Eventually the gallbladder becomes a harbor of infection and a site of fomenting potential mischief for its neighboring structures. The sequelae of biliary tract infection now assume major importance through neglect to deal promptly and properly with the original lesion.

The consequences to the gallbladder itself are important. It becomes a useless organ and a factor in the formation of adhesions to neighboring structures. Such adhesions, particularly to the stomach and duodenum, are a source of annoyance to the patient and of confusion to the diagnostician. In many instances the roentgenologist is unable to distinguish between the deformity of the duodenum caused by ulcer and that by adhesions. The clinical picture may be suggestive of either lesion. In fact, even when the abdomen is opened the surgeon may experience considerable difficulty in determining whether the original lesion is in the duodenum or in the gallbladder. Pericholecystic adhesions may have their attachments not only to the duodenum and pylorus but also to the hepatic flexure of the colon and the great omentum, and not infrequently the dilated pelvis of the gallbladder is adherent to the right free border of the gastrohepatic omentum along the line of the common duct. Unless the adherent pelvis is carefully dealt with and carefully separated and the structures are identified, either the common or the hepatic duct or both ducts may be injured, the possible serious consequences of which are well known.

Perforation of the gallbladder may occur into the free peritoneal cavity through the action of ulceration and the pressure of stones. This usually fatal catastrophe fortunately is rare. More commonly, adhesions will attach the gallbladder to one of the neighboring hollow viscera, such as the stomach, duodenum or colon. When perforation occurs, the result is the formation of an internal biliary fistula. Judd and Burden, who have reported 153 cases of internal biliary fistula, conclude that: "Internal biliary fistula is a late complication of cholelithiasis. It rarely occurs in the absence of calculi. The organs involved and the order of frequency are duodenum, colon and stomach. The fistula is nearly always by direct communication; only rarely is there an intervening abscess cavity. The symptoms are characterized by long duration and severity. Diagnosis is usually made only at the operating table. Formation of a spontaneous biliary fistula is in no sense a cure of cholelithiasis, but is an addition and dangerous complication. The treatment of the condition when found is closure of the fistula, cholecystectomy when possible, and careful exploration of the ducts for stones. Emergency drainage of the gallbladder and ducts may be the only logical procedure in some cases. Separate lesions in the stomach or duodenum may be complicating factors. The unnecessarily high operative mortality is a direct result of delay of the patient in coming to operation."

Carcinoma of the gallbladder is not a very uncommon sequel. It may be designated as a late complication of cholecystitis in which gallstones have been the inciting factors. The rôle of irritation in the pathogenesis of cancer is self-evident. The constant local irritation of stones in the gallbladder leads to proliferation of cells which may in time overstep the mark and spread beyond the bounds of usefulness and repair. When this stage is reached, cancer is established. The symptoms of malignancy of the gallbladder do not differ materially from those of cholelithiasis. The diagnosis is rarely made before operation, and at operation the condition found is usually so far advanced that it is beyond the hope of remedial measures. Carcinoma of the gallbladder does not always develop in ancient gallstone disease; but when it does, the reason, I believe, is to be found in individual susceptibility. In other words, the development of a carcinoma under such circumstances depends on two factors: individual susceptibility and the irritation that provokes proliferation.

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* Read before Section on Surgery, General and Abdominal, at the Eighty-First Annual Session of the American Medical Association, Detroit, June 26, 1930.

When the function of the gallbladder is lost or impaired through disease or by removal, there follows a dilatation of the extrahepatic bile ducts which apparently is caused by intermittent contraction of the sphincter of Oddi. After a time the sphincter becomes incompetent and bile flows continuously into the duodenum but the ducts remain permanently dilated. The mechanism of the sphincter of Oddi, its normal and abnormal function, afford a splendid field for investigation into the etiology of biliary tract disease. I believe that therein will be found the explanation of many postoperative phenomena and symptoms which at present are not understood. In operations on the biliary tract it is my routine practice to make a thorough examination of the common duct. When there has been a history of jaundice and the common duct is dilated and thickened, I always make an exploration of its interior by the use of probes and also with the finger if possible. I am not satisfied that this exploration has been complete until an instrument can be freely passed into the duodenum. In many cases the value of this procedure has been demonstrated by the finding of a contracture or an actual stricture at the terminal portion of the common duct, through which considerable force was required to pass the instrument into the duodenum. Contracture of the termination of the common duct may be due to inflammatory stricture, to pressure from inflammation in the head of the pancreas, and to spasm of the sphincter of Oddi. These conditions cannot always be differentiated and their frequency makes it imperative for the surgeon to be certain of the free patency of the duct. A number of German surgeons have advocated and carried out dilation of the distal end of the common duct by the use of graduated probes in every case in which exploration of the duct has been advisable. I believe that if more attention were given to this source of disturbance many of the postoperative sequelae of biliary tract disease would be eliminated.

The effects of cholecystitis on the liver have occupied my attention for some time. While I am not yet entirely satisfied as to which is the primary disease, I am inclined to believe that in the majority of cases the original lesion is in the gallbladder. There are probably some cases that begin as a diffuse infection of the biliary tract which later becomes localized in the gallbladder and the adjacent portion of the liver. But my surgical experience has convinced me of the pernicious effect which chronic cholecystitis has on the structure and function of the liver and that the best results in these cases are to be obtained by the removal of the gallbladder before the hepatic damage has become irreparable.

A potent reason for assigning to the gallbladder the primary rôle in the production of hepatitis lies in the fact that in the mild cases of cholecystitis the involvement of the liver is limited to a small area immediately adjacent to the gallbladder. In cases of longer duration the hepatitis is more diffuse and deep seated. It is especially noticeable in the anterior border of the liver, which is sometimes thickened to as much as from 8 to 10 cm. The entire liver is often enlarged, friable and has the appearance of intense congestion. It seems logical to believe that prolonged diffuse infection of the liver as it is seen in hepatitis will eventually lead to biliary cirrhosis. The latter condition favors congestion and enlargement of the spleen so that to obtain a cure in these long standing cases it is sometimes necessary to remove the spleen and the gallbladder, and to secure external biliary drainage by the use of a T-tube inserted in the common duct.

Infection may reach the liver through the blood stream, through lymphatic spread from an infected gallbladder and by way of conduction along the bile duct, as an ascending cholangeitis.

Cholecystitis and cholangeitis frequently are associated lesions. Studies of this condition, notably the study of Burden, show the presence of inflammatory changes in the walls of the common duct in every case of chronic cholecystitis. These inflammatory changes seem to follow along branching glandular channels which have a widespread distribution throughout the entire duct system. They afford a ready means of dissemination and infection. The inflammatory process is characterized by round-cell infiltration, of cystic dilatation of the mucous glands, deposits of fibrous tissue and thickening of the walls of the duct. It may extend upward and involve the smaller ducts of the liver and become a cholangeitis. This deep-seated interstitial infection of the walls of the duct not only encourages chronicity but makes difficult any successful therapeutic attack. The only rational therapeutic procedure is removal of the focus of infection, which is usually the gallbladder, and the maintenance of free drainage of bile by the introduction of a T-tube into the common duct. Choledochitis is a cause of stricture, a lesion that occurs most frequently at the junction of the cystic and common bile ducts in a region where choledochitis is most pronounced as a secondary lesion of cholecystitis. In these cases of inflammatory narrowing of the duct, removal of the gallbladder may be followed in several months by the development of obstructive jaundice caused by formation of a stricture. Needless to say, secondary operations for this condition are formidable, attended by great immediate danger and often by unsatisfactory postoperative results and a long convalescence.

Stricture of the common bile duct or the hepatic duct may be primary, but most often it follows some surgical procedure on the biliary tract, although the operation is not necessarily the cause of the stricture since the healing of the inflammatory lesion along the duct may result in the formation of scar tissue with serious interference with the lumen of the common duct. In a certain percentage of cases the stricture has been caused by operative injury to the duct, particularly in the region of the junction of the cystic and common ducts. It is of the utmost importance for the surgeon to be absolutely certain of his identification of the structures during operation because it is the only method that offers assurance against operative injury. A word of caution should be mentioned regarding efforts to ligate the cystic duct flush with the common duct during cholecystectomy. To do so is unwise and unnecessary. Although leaving a small stump of the cystic duct may not be objectionable, efforts to remove it completely may seriously compromise the lumen of the common duct. Another possible cause of stricture is the introduction of gauze packing in too close proximity to the common duct. This may result in the excessive formation of scar tissue and stenosis of the duct. The symptoms of stricture of the common duct are jaundice and pain; the jaundice is intermittent in character and is usually preceded by an attack of colic, so that the symptoms closely resemble those of stone in the common duct. Operative injury to the duct usually results in a biliary fistula, spontaneous closure of which is followed by the development of constant, complete jaundice.

The sequence of events from cholecystitis to pancreatic lymphangitis and chronic pancreatitis has lost none of its significance, to me at least, during the course of my experience since my interest was first aroused in this pathologic process. I see it often enough to confirm my stand, not only at operation but in the follow-up clinic, where failure to obtain complete relief from upper abdominal symptoms is plainly due to a chronic pancreatitis. Regional lymph node involvement in cholecystitis is very much like cervical adenitis caused by tonsillitis or by inguinal adenitis in an inflammation of the lower extremity. As the original inflammation subsides by treatment or by removal of the focus of infection, the adenitis usually subsides. Unfortunately, the pancreas, when seriously affected, undergoes fibrotic changes which remain as a potent cause of trouble. Since there is no direct way of attacking the pancreas, the treatment of pancreatitis is essentially prophylactic; that is, treatment of the biliary tract infection before the pancreas has become involved by destructive inflammation. It is my belief that a certain percentage of cases of diabetes are caused by pancreatic changes which result from cholecystitis. Certainly, the frequent association of disease of the biliary tract and potential diabetes as shown by the high sugar content of the blood is not a mere coincidence.

While most practitioners are aware of some of these local effects of gallstone disease, I have thought it worth while once more to call attention to the familiar as well as to the less familiar sequelae of biliary tract infection. Constant dripping wears away the stone (though not the gallstone) and constant reiteration may wear away the delusion that too much attention is being paid to disease of the gallbladder and its local and remote effects. The latter need as much emphasis as the former, for the rôle of the gallbladder as a focus of infection is not sufficiently in the consciousness of the average diagnostician. The occurrence and character of the manifestations secondary to a focal infection are dependent on the number, virulence and specific action of the bacteria. The degree of tension in the focus is due to the mechanical obstruction to normal drainage and the vascularity of the focus. These, I believe, are the generally accepted facts with regard to the relationship of focal infection to local and systemic disease. Since in its structure the gallbladder admirably complies with these requirements for the rôle of a focus of infection, it is rather surprising that its part in systemic disease was not earlier suspected and has not been more generally conceded. The infective agent often is the streptococcus, which, as is well known, has a special affinity for certain tissues, such as the fascial planes, the joints, the heart muscles and occasionally the kidneys. The frequent presence of streptococci in the walls of the gallbladder and in gallstones is demonstrable evidence that certain systemic symptoms can be directly referable to a cholecystitis or a cholelithiasis. It is therefore not unusual nor surprising to find that some of these patients complain of attacks of rheumatism and develop painful nodules in muscular planes, while others show myocardial symptoms, dyspnea and palpitation on slight exertion, the fear of which leads to a certain inertia which in turn creates a tendency to the fair, fat and forty type of individual and adds the danger of fatty cardiac degeneration to the myocarditis. Occasionally rheumatoid arthritis, and sometimes disease of the kidneys, may be traced directly to an infected gallbladder. Again, I say, these are not theories but facts borne out by my own experience and the experience of others, that with the removal of the gallbladder the systemic disease is cured or at least very much relieved provided, of course, that the damage already done is not irreparable. Therefore I say, "Ever bear in mind the insidious streptococcal infection lurking in the wall of the gallbladder."

Myocardial disease has long been recognized as a lesion which is frequently associated with cholecystitis. Many years ago, Kerr emphasized the causal relationship between these two lesions. My experience certainly confirms this observation. In fact, myocardial disease is a prominent cause of death after operations on the biliary tract. In many cases the infection in the gallbladder is no doubt responsible for the myocarditis. In other cases the development of the two lesions is favored by the constitutional make-up of the individual. Nevertheless, it must be recognized that myocarditis may be a sequel of cholecystitis and that the possibility of this complication merits serious consideration on the part of those who counsel delay in the surgical treatment of biliary tract disease.

From their medical colleagues, physicians hear much about adhesions following operation on the biliary tract. I am admittedly and without reservation an advocate of early surgical treatment of biliary disease. A long experience has convinced me of the evil consequences of delay. The results of surgery are by no means perfect and especially in the region of the right upper quadrant of the abdomen, which contains so many important structures. Surgical intervention when made at a late hour cannot be expected completely to restore the condition to normal. Adhesions more or less follow every abdominal operation, but rarely do I find that they are the actual cause of symptoms. In cases of severe disease in the right upper quadrant of the abdomen, as in suppurative cholecystitis, nature forms dense adhesions which often make it extremely difficult for the surgeon accurately to identify the structures. Such adhesions cannot completely be corrected by any type of operation; in fact, it is the part of surgical wisdom to disturb them as little as possible to accomplish the desired operative procedure. It seems to me an unfair criticism of surgery of the biliary tract to ascribe postoperative symptoms directly to the operative procedure with the implication that had the operation not been done the patient would not have the symptoms. Surgical errors do occur and sometimes they make the last condition worse than the first; but, as a surgeon, I am happy to state that such occurrences, fortunately, are rare and relatively infrequent.

The symptoms of chronic cholecystitis, with the exception of colic, are largely those of a reflex gastric disturbance commonly spoken of as gallstone dyspepsia. I believe that most of these gastric symptoms are caused by pylorospasm and that many of the postoperative complaints are also due to pylorospasm. Clinical and experimental studies have well established the irritability and dysfunction of the pyloric sphincter in cases of abdominal irritation. Pylorospasm, which has long persisted as a reflex phenomenon of chronic cholecystitis, leads to hypertrophy of the pyloric sphincter, which I am able frequently to demonstrate at operation. For the purpose of correcting this condition and avoiding postoperative symptoms it has recently been my practice, in operations on the biliary tract in cases showing pronounced gastric symptoms, to remove the anterior half of the pyloric sphincter. This added procedure is easily carried out in a short time and without an opening into the lumen of the intestine. The technic

has been described in previous publications concerning the treatment of peptic ulcer. The procedure eliminates the pyloric sphincter as a factor in postoperative complaints and has been attended by satisfactory results.

In this paper I have included only the more important sequelae of biliary tract infection in which the gallbladder has been considered as the center of attention. Some of the sequelae of cholecystitis are loss of the function of the gallbladder, dilatation of the common duct, insufficiency of the sphincter of Oddi, gallstones, choledochitis, cholangeitis, hepatitis, biliary cirrhosis, pancreatic lymphangitis, chronic pancreatitis, carcinoma of the gallbladder, myocarditis, focal infection and pylorospasm. Consideration of this array of diabolic forces should be sufficient reason to make one appreciate the serious potentialities of infection of the gallbladder. To me there seems no valid reason to withhold the help that surgery can offer. Improvement in surgical end-results will follow earlier intervention, that is, before the sequelae of biliary tract infection have become established.

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ABSTRACT OF DISCUSSION

DR. WILLIAM D. HAGGARD, Nashville, Tenn.: To Dr. Deaver more than to any one else belongs the credit for teaching that pancreatitis is largely of lymphatic extension from the gallbladder. Opie described a postmortem in which the gallstone was lodged in the ampulla of Vater and mechanically retrojected the bile into the duct of Wirsung. I have never encountered a facsimile of it. Robson called attention to a fact that with a pancreas so hard and enlarged as to be mistaken for carcinoma, when the gallbladder was removed for associated gallstones, although the surgeon thought the condition was malignant and gave a grave prognosis, he found that the tumor disappeared and the patient got completely well. That was the experience that ushered in the clinical recognition of chronic pancreatitis. Not all cases of chronic pancreatitis are cured by cholecystectomy. In such cases, Dr. Deaver has shown that prolonged drainage of the common duct, even as a secondary operation, if necessary with the T-tube, is curative. The sequelae in reference to other organs are extremely interesting. Willius showed that 54 per cent of cases of cardiovascular disease associated with gallstones were greatly benefited by the removal of the gallstones. A considerable number of anginoid cases were benefited, and in those who were not relieved, the attacks were modified, were much less in severity, and greatly ameliorated. One does not have the same excellent result with myocardial disease from removal of the gallbladder as a focus as from an arthritis and "lumbagos" in a child, for instance, with enlarged tonsils. The arthritides with associated gallbladder disease are likewise not so definitely and uniformly benefited. The streptococcus is a notoriously chronic type of micro-organism, and when the arthritides have that origin, the fascial planes are a long time getting over the infection. Moreover, whatever focus started the streptococcus, the gallbladder and the heart or the joint were probably hit at the same time. The cases of carcinoma of the gallbladder from gallstones formerly numbered about 5 per cent. They are always associated with gallstones. At the present time, as the result of the universal and successful practice of removing the gallbladder early, and nearly half of them without gallstones but with a chronic, infectious, intramural cholecystitis, the incidence of carcinoma has been reduced to such an extent that it is probably not over 1 per cent. The question, therefore, may well be asked: What does it profit a person to carry around gallstones that have a potential likelihood of production of cancer of 1 per cent when removal of the gallbladder probably would carry much greater mortality? In reference to all these sequelae, I think this may be said: It has been my practice for a number of years in selected cases of primary acute cholecystitis, diagnosed early, to treat then and there by operation in the beginning.

DR. CLARK D. BROOKS, Detroit: I recall about twenty years ago visiting Dr. Deaver's clinic in Philadelphia. He had a difficult gallbladder case presenting stones in the hepatic and common ducts. After a few minutes he succeeded in getting the gallstone from the common duct and I remember his remark as he held it up: "Oh, if I could only have had you nineteen years ago!" Of course, the patient had complications, simply because of this long-standing infection. Regarding the sequelae of biliary disease, I believe that operation should be performed as early as possible. However, one must be sure of the diagnosis. In addition to the clinical symptoms, one should use the Graham test as a diagnostic acid, when the opportunity affords itself. It is not felt in our clinic that the examination is complete unless we have used the Graham test. We use the oral method, and 97 per cent of the cases diagnosed by this procedure have been correct. There is not time to say much about the cases of calculous and noncalculous gallbladder. They cause different symptoms. In cholecystitis of the noncalculous type, when the symptoms are not relieved by medical treatment, after a few months, surgery is indicated. The longer the delay in the medical treatment, the greater the complications and the higher the mortality. It is well known that many heart attacks are relieved by surgical intervention in an infected gallbladder. Not infrequently the patient with common or cystic duct obstruction and a distended gallbladder will suffer attacks of cardiac irregularity, which are entirely relieved by surgical drainage. The obese patient and the aged patient are not fit for any extended operation, and when possible several days of careful preoperative treatment is all important. For over two years I have used spinal anesthesia. I think it is the most satisfactory anesthetic I have ever used in operations on the biliary tract. By doing choledochotomy one can remove the gallbladder and drain the ducts. I believe that if more of the so-called duodenal drainage tubes were cut up in sections 8 inches long and put in the cystic or common ducts and left there several weeks, instead of used to tickle the esophagus, many patients would be alive today.

DR. F. F. LAWRENCE, Columbus, Ohio: Dr. Deaver's exposition reminds me that there are four questions every surgeon must answer: What, why, how and when? What and why will ever remain for scientific and abstract determination. The how depends on the surgeon's training and personal preference. Why does biliary tract infection occur, to begin with? Why do these sequelae of which Dr. Deaver speaks occur? In order to get a clear conception of the picture, the anatomy of the lymphatics must be reviewed. According to Sappey and Poirier, the lymphatics of the pelvis and abdomen come up along with the branches of the portal vein to their junction, and a short distance after they join to form the portal vein become embedded in the wall of the portal vein, enter the liver and break up there, forming intralobular, sublobular and interlobular branches, the same as the vein does. Then, in every case of biliary tract infection one can get a history of typhoid infection, pelvic infection or appendicitis. If this infection comes from below, and if the bile tract, lymphangitis and lymph nodes which remain as sequelae are really antecedent, they exist because the infection has been taken up from the chronic appendicitis, the pelvic infection, the typhoid ulcer or elsewhere, and carried up. But the infection was in the lymph vessels and lymph glands first, and they became lymph nodes. Why, then, does the septic cirrhosis occur? Because of delay or improper drainage. If the infection should be primarily in the substance of the liver in the small secretory ducts of the liver and in the bile tract second, if that infection was not drained out this septic cirrhosis of the liver might be expected to develop. Why does the splenitis occur which has sometimes been thought Banti's disease and a splenectomy performed therefor? Because of the portal obstruction damming back the blood on the spleen. Nobody has ever seen a pathologic examination of the spleen under any such condition, or after death, in which anything but venous engorgement was shown.

DR. E. PAYNE PALMER, Phoenix, Ariz.: Chronic cholecystitis is a surgical disease, amenable only to surgical treatment and should be so treated as soon as the patient can be prepared for treatment. One should not wait until next week or next month or next year. I do not think that the surgeon needs so

much educating in cholecystitis as the internist, the gastroenterologist and the general practitioner, and surgeons advise the patient to wait until next week or next month, or maybe next year, to see what the result will be. I have had to treat two cases of intestinal obstruction as the result of a spontaneous cholecystoduodenostomy having occurred and large gallstones passing down into the intestinal tract producing the obstruction. I think that the importance of postoperative care should be stressed. If the patients are sent away with the idea that they are cured, there are going to be failures and the results will not be nearly so satisfactory as if one turns them back to a good internist or to their home practitioner with the idea that the treatment must be carried on for a long period.

DR. WILLIAM J. CASSIDY, Detroit: The great question in the procession across the surgical arena is one which has taken place in the last twenty years, which has made surgery so safe that the abdomen has been opened in a multiplicity of instances with impunity and many diagnoses have been based on symptomatology which does not bear the searchlight of accuracy at the time it is opened up. Many innocent gallbladders, or gallbladders with a few little cobwebs around them, are raised to the pinnacle of a terrific disease. This is the situation today. I have no quarrel with the surgeon who wants to remove or drain a gallbladder when he can show that it is infected, but I have a great deal of antipathy to the surgeon who opens every abdomen because the patient has a few little swallows of gas, whose diet has never been regulated, and nothing has been done previous to that time. I don't care how expert the surgeon is, if he does not regulate the patient after operation and regulate his home environment, he has done him absolutely no good by taking his gallbladder out. Dr. Lawrence hit the nail on the head. He said that the infection in the lymphatic stream went up into the liver. What is done surgically? The gallbladder is taken out and this large mass of ducts all through the liver, the common duct, the cystic duct and the head of the pancreas, which can't be taken out, are left. The surgical field needs revamping. Some preconceived ideas must be changed. The streptococcus cannot be got rid of as long as people are concentrated in big cities and the water is polluted. In spite of chlorination, cesspool water is being drunk all the time. Colon bacilli by the million are in it. It doesn't kill people because they have become acclimated. The fellow who comes in from the rural districts to the city and changes his occupation and his method of living has a lowered resistance and becomes a potential subject for diseases which he was not subject to before—intestinal disturbance and upper right quadrant disease—because the liver takes care of most of his infectious areas, and it has the highest percentage of circulation. In other words, one lives in one's liver.

DR. JOHN B. DEAVER, Philadelphia: Just one word about T-tube drainage. The mucous membranes are very tolerant to rubber. The retention catheter, for example. I had one patient who wore a retention catheter for fourteen years, and he remained perfectly well. If the urethra is tolerant to a rubber tube, why not the common duct? Some of my patients wear the T-tube indefinitely with equal tolerance. One woman wore a tube for four years. Then I had a great deal of trouble getting her to let me take it out, because three operations done previously were followed by recurrences, and she did not want another recurrence of symptoms.

Vision Which Belongs to the Pioneer.—In another quarter, moreover, and in one which is of vital, although of less immediate concern to the layman, the need of specialists is even greater. This is the field of medical research. Our knowledge of disease has advanced so far that further progress will probably be slow, and little is to be expected except as the result of prolonged and concentrated labor. The nuggets lying on the surface have been picked up and the hidden gold will be found only by him who digs deeply and whose training has taught him where to dig. Here is needed not only the specialist, but the specialist with that unusual gift of vision which belongs to the pioneer and which urges him beyond our present confines. —Peabody, F. W.: Doctor and Patient, New York, Macmillan Company, 1930.

DIAGNOSIS AND PROGNOSIS IN PEDIATRICS *

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I am going to take up the subjects of diagnosis and prognosis in pediatrics from the point of view of the practicing physician, not of the hospital. The object of the practicing physician is to arrive at the correct diagnosis with the least possible expenditure of his own time and energy and with the least possible inconvenience and expense to the patient. The hospital has to consider also the training of interns and students, the amassing of statistics and the acquisition of new knowledge, while time and expense are not as important.

DIAGNOSIS

In a large proportion of the children seen in private practice it is evident from the history, provided it is taken carefully, what the trouble is or, at any rate, where to look for it on physical examination. Observation of the parents and child during the taking of the history often shows, incidentally, that the trouble is psychologic rather than physical. The physical examination almost always makes the diagnosis plain, provided, again, it is a complete and thorough one. A physical examination is not complete, of course, or worthy of the name unless the child is stripped and examined from head to foot. After taking the history and making the physical examination the physician should know what the trouble is, that it is one of two or three things, or that he has no idea what it is. The last diagnosis is, moreover, a thoroughly satisfactory one, provided it is arrived at after proper consideration.

If the diagnosis is evident, it is unnecessary to carry out any laboratory procedures unless, for some reason, it seems advisable to corroborate it. If the diagnosis lies between a few diseases, only those laboratory procedures should be done which will aid directly in the diagnosis between these diseases. These must be done. It is as bad practice and as unscientific to carry out others which do not apply directly as it is to omit those that do. If the physician has no idea what the matter is, he should not flounder around trying all sorts of laboratory procedures and taking roentgenograms of the whole body in the hope that he may get hold of something, but should call for help.

Differential Diagnosis.—In making the diagnosis between diseases, it must be remembered that it is only differences in symptoms and physical signs which help. Symptoms and signs which are common to the diseases in question are of no assistance. Cough and dulness on percussion over the lower part of the chest are, for example, of no value in the diagnosis between solidification of the lung and fluid in the pleural cavity, while the position of the heart is of the utmost importance, being normal in one and displaced in the other. The leukocyte count, again, is of no value in the diagnosis between two diseases in both of which it is increased or diminished. It is very valuable, however, when it is increased in one and diminished in the other.

Another thing to be remembered in differential diagnosis is that, on the chances, the child has the most

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* Read before the Section on Diseases of Children at the Eighty-First Annual Session of the American Medical Association, Detroit, June 27, 1930.

common of the diseases under consideration. The more uncommon the disease is, the more improbable it is that the child has it. He may have it, but it is unlikely. The burden of proof is to show that he has it, not that he has not.

Another point to be kept in mind is that a child seldom has more than one thing the matter with it at a time. When the symptoms and signs apparently cannot be due to a single disease and its complications, it is almost certain that they are misinterpreted and that they can be fitted together, if better understood. A diagnosis of more than one disease is almost always wrong.

Diagnostic Ability.—I have been interested for many years in the difference in diagnostic ability of physicians and the explanation for it. The diagnostic ability of physicians who are poorly trained or do not take careful histories and make thorough physical examinations is, of course, a negligible quantity and not worthy of consideration. I am speaking of those who are well trained and who are reasonably careful and thorough. A physician's general medical knowledge is, of course, of great importance. The more he knows, the more likely he is to recognize a disease when he sees it. Important as knowledge is, my experience has been that, as a rule, mistakes in diagnosis are usually due not to a lack of knowledge but to lack of care, the lack of care being due to hurry or laziness. Experience is valuable in the same way as general medical knowledge. It is easier to recognize what one has seen before, perhaps many times, than what one meets for the first time. It must not be forgotten, however, that experience not infrequently means simply making the same mistake over and over.

It seems to me that the great difference between physicians is not so much in their knowledge and experience as in their ability, with given data, to separate the chaff from the wheat, to distinguish between important and unimportant symptoms and signs, and to recognize the salient points. This ability is inborn. It can, however, be cultivated to a certain extent. It is the same ability which makes a man successful in other lines—the law, business, banking. If he does not have it, he is led astray by the unimportant, and, once on the wrong track, remains on it and fails to recognize the most obvious signs and signals.

Object in Diagnosis.—The object aimed at in diagnosis is not simply to give a name to the trouble which a child has but to understand just what is wrong with him in order to treat him properly. The diagnosis should include a definite conception not only of the pathologic changes in the individual instance but also of the deviations from the normal physiologic processes caused by them. Treatment, to be rational, must be based on these conceptions and on what is known of the etiology, not on a name.

PROGNOSIS

The most important thing from the point of view of the family is the prognosis. Relatively, it cares little what is the matter with the child. It wants to know whether he will get well or not and, either way, how long he will be sick. Incidentally, whether the child lives or dies, it wants him to be made as comfortable as possible and to have the illness cost as little as possible.

Two things must always be borne in mind in prognosis in early life. First, children are sick many times but die only once. Second, the tendency to recover in early life is greater than in later life. Physicians are naturally and temperamentally either optimists or pessimists as regards prognosis. Whichever they are, they have to be constantly on their guard against this tendency. I am an optimist and always have to allow for it. The patients of certain physicians are always very sick. The question arises as to whether their pessimism is not intentional rather than temperamental. However that may be, it certainly increases the number of visits which they make. A practical point in this connection, which should not be allowed, nevertheless, to influence the prognosis, is that parents are never really angry if a child recovers after a bad prognosis, while they often are if it dies after a good one.

Prognostic Ability.—The prognosis depends on a knowledge of the usual course of the disease, the severity of the disease in the individual instance and the resistance of the individual patient. The ability to appreciate the severity of the disease in the given instance and the resistance of the given patient and, therefore, the ability to make a correct prognosis can be acquired only by experience. Some men learn more than others, however, from experience. As already stated, experience may consist merely in making the same mistake over and over. The same sort of ability is required in prognosis as in diagnosis; namely, the faculty of being able to pick out the important from the unimportant symptoms and signs, and to recognize the salient points. Mistakes in prognosis are most often made by relying too much on single symptoms or laboratory observations and not paying enough attention to the general condition and appearance of the child. For example, a high temperature or low white count in pneumonia in early life does not justify a bad prognosis if the general condition and appearance are good.

Grave Prognosis.—It is always difficult to know what course to take when the diagnosis is in doubt but the probabilities are serious, or when the prognosis appears grave or bad. Should the physician carry the anxiety himself for a time and spare the family, or should he make the family share it with him from the beginning? There may be some question as to the best course to pursue when the patient is an adult, but not when it is a child. The family should always be told. If, in acute disease, it is not told and the child dies, it always blames the physician for not telling. If the disease is a chronic one or the child is abnormal in some way, for example, feebleminded, the family is sure, in the course of time, to consult some one else who will tell the truth. It then almost never gives the physician any credit for sparing its feelings but concludes that he was ignorant and did not know what the trouble was.

In this connection, however, I must make one last observation which may be considered either encouraging or discouraging, according to the way in which one looks at it. If the family has confidence in its physician and the child dies, it is "an act of God," no matter whether the diagnosis was right or wrong, the treatment good or bad, or what the prognosis. If the family does not have confidence in its physician, the death is due to his negligence, no matter whether his diagnosis, treatment and prognosis were absolutely correct.

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ABSTRACT OF DISCUSSION

DR. EUGENE ROSAMOND, Memphis, Tenn.: After listening to Dr. Morse I feel like a man who might be called on to discuss the epigrams of Epictetus. As usual he has told us the greatest number of truths in the fewest possible words. I am glad he told us that at times an acknowledgment of our ignorance of the condition of the patient should constitute a satisfactory diagnosis. A man might write a book on diagnosis and say less. I am glad he told us that common diseases are usually the correct diagnosis. I find that in consultation work the average young physician is much more apt to hunt for the symptoms of rare and unusual conditions, to hunt on Main Street for bears rather than for sparrows. We are too often prone to depend on one particular thing that we have learned, one particular symptom. I remember that several years ago I made quite a little local reputation for myself because I learned that pneumonia in childhood did not hurt, and because I had learned that when a child coughed and showed signs of pain he usually had an earache. I received a long distance call to come to see a doctor's baby. A district medical society was meeting in his town. He told me he could find nothing in the child's chest, but he had a cough and cried when he coughed. I suggested earache. An ear, nose and throat man was called and confirmed it, and I didn't have to make the night trip. I found myself afterward depending a great deal on this one particular symptom. Dr. Morse has cautioned against paying too much attention to one particular symptom.

OCCLUSIONS OF THE LUMEN OF THE FALLOPIAN TUBE*

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The physiology and pathology of the lumen of the fallopian tube have been studied in various ways both clinically and in the laboratory. The insufflation test of Rubin has been valuable in demonstrating the patency or nonpatency of the tubal lumen. The injection through the uterus of opaque substances, especially iodized oil, has given limited visual information of both the normal and the pathologic state of the oviducts. It is possible to tell fairly accurately by the iodized oil test where the beginning of obstruction occurs.

The extent of this obstructing lesion, however, has been left to the pathologist to determine. Owing to the laborious task of making serial sections, the nature of the tubal occlusion is seldom accurately ascertained. Our interest in this subject was aroused by observing the progress of patients with pelvic inflammatory disease under conservative management. Such patients who had had definite pathologic changes in the pelvis, in the form of inflammatory masses, were seen to make steady improvement, often with disappearance of all palpable pathologic conditions in a short time. That recovery occurs in numbers of these cases is sufficiently proved by the fact that many patients become clinically well and a few become pregnant later.

These observations led us to the present study. We started this work last year, using materials from several of our hospitals and autopsy clinics. The specimens were studied while fresh and were not put in formaldehyde until after they were injected and photographed. The objects of our investigation were to find (1) the most frequent sites of occlusion of the lumen, (2) the extent of the occlusion, and (3) the microscopic appearance of sections of the involved area, in the hope of finding some evidence of resolution that might help us in determining the best clinical course to pursue in dealing with such a condition.

Hermstein and Neustad [1] and later Geist and Goldberger [2] studied the intramural portion of the tube in its relation to sterility. They used extirpated organs injected through the uterus with opaque substances, but only in those cases in which the tubes were patent. These authors concluded that variations in the course of the intramural portion offer a bar to impregnation, making the passage of sperm or ova impossible, and that such obstructions may be present with or without the closure of the fimbria.

Our study included not only patent tubes but also those with varying degrees of occlusion. In specimens in which the lumens were found by uterine injection to be closed, the tubes were injected from the fimbriated ends. In this way we were able to determine the exact

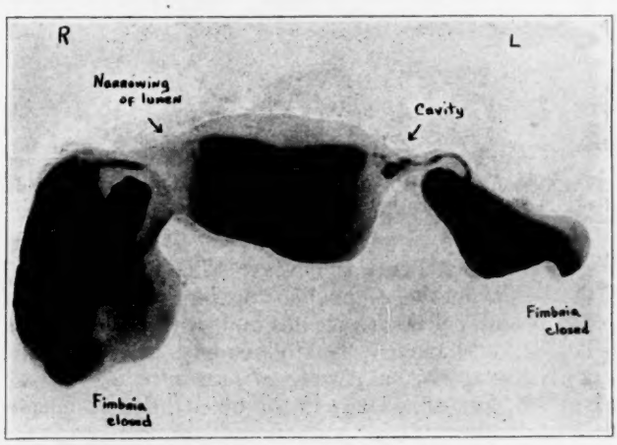

Fig. 1 (case 7).—Appearance of injected specimen in chronic salpingitis. Smears were positive for gonococci. There had been no previous attacks of salpingitis. The present attack started forty-seven days before operation. At left is seen constriction of lumen of intramural portion, with cavity at junction with isthmian portion, dilated ampulla and closed fimbria; at right, narrowing of lumen through the intramural and isthmian portions with widely dilated ampullar portion and closed fimbria.

extent of the obstruction. The injection of the lumens of the tubes, from the uterine or tubal ends, is bound to open or spread adherent mucous folds, so allowance was made for this in the interpretation of the pathologic changes. At first we did not attempt to measure the pressure used in injecting these specimens, and as a result we overdistended the endometrial cavity as well as the lumens of the tubes, producing overdilatation, or the injection of blood vessels. In order to control such irregularities, injections were subsequently made with measured pressure and the results were more satisfactory. The uterine and tubal cavities were filled by using pressures of 100, 150, 200 and 250 mm. of mercury. The lowest pressure required to give clear pictures was used. Bismuth mixtures and sodium iodide solutions were employed. The latter gave the best photographic results but were hard to handle because of leakage from different parts of the specimen. The bismuth injection was found to be better for demonstrating diverticula connecting with the lumens, as the bismuth could be seen in the stained

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* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Eighty-First Annual Session of the American Medical Association, June 25, 1930.

1. Hermstein, A., and Neustad, B.: Ztschr. f. Geburtsh. u. Gynäk. **88**: 43-60, 1924.
2. Geist, S. H., and Goldberger, M. A.: Surg. Gynec. Obst. **41**: 642-654 (Nov.) 1925.

microscopic sections. The specimens were prepared as follows: The cervix was tied or clamped, as were also the fimbriated extremities unless they were closed by inflammatory processes. Injection was made through a needle inserted into the endometrial cavity. In the event that the occlusion of either tube, in its intramural or isthmian portion, was present, one or both tubes were injected by inserting the needle distal to the obstruction. A similar procedure was used for tubes removed by

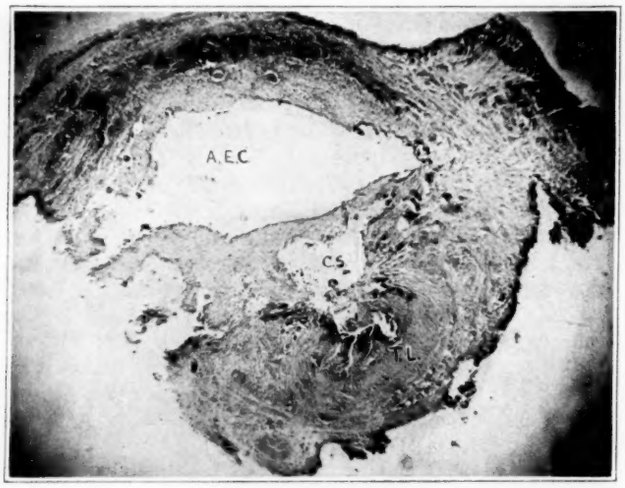

Fig. 2 (case 7).—Section through cavity adjoining the lumen in the intramural portion of the left tube illustrating: *T L*, tubal lumen; *C S*, communicating sinus; *A E C*, large epithelial-lined cavity.

the so-called Bell-Beuttner method. The fimbriated end of the fallopian tube, even when apparently closed, would seldom stand a pressure of 100 mm. without leakage.

The study included the following types of cases: four that were normal, twenty-six instances of chronic salpingitis, five of fibroids in the uterus, one of adenomyoma of the uterus, and one of carcinoma of the cervix.

The course of the intramural portion of the normal lumen was found to be upward and outward to the point where it joined the isthmian part. It then extended outward in quite a straight line to join the ampullar portion, where a few gentle convolutions occurred. The convolutions seen in normal specimens removed from the body were not fixed convolutions; that is, they could be made or changed at will. Geist and Goldberger [2] however, stated that in 60 per cent of their cases the course of the intramural portion was not a simple direct one but tortuous, either traversing the uterine wall in a series of gentle convolutions up to four in number or in a course marked by one or two decided angulations. They concluded that such variations in the course of the intramural portion of normal tubes may offer a bar to impregnation. The importance of these convolutions is contrary to our observations. We injected a fresh specimen within a half hour after death, before rigor mortis had set in. Numerous convolutions were seen in the intramural and isthmian portions. In the same specimen, by making gentle outward tension on the round ligaments, nearly all these convolutions disappeared. We therefore do not feel that a study of these convolutions in the normal postoperative or postmortem specimens shows the true condition in the living organ. Rubin [3] has shown and pointed out that the average course in the living is nearly always straight outward.

3. Rubin, I. C.: Surg. Gynec. Obst. **46**: 87-94 (Jan.) 1928.

GROSS EXAMINATION

The following observations were made in cases of chronic salpingitis: The specimens showed varying degrees of inflammatory reaction. Adhesions were present in practically all instances. In most cases the inflammatory masses were bound down to the broad ligaments or adjacent structures. Such adhesions produced varying degrees of fixed convolutions, especially in the ampullar portions of the tubes. The uterus likewise was affected by these adhesions. It was frequently held in an abnormal position. The adhesions in the gonorrheal type were filmy and easily broken up, conforming to the observations of Curtis.[4] Different types of pathologic changes in the tubes were found, pyosalpinx, hydrosalpinx, chronic inflammatory conditions that had undergone varying degrees of resolution, and, in some, complete restitution on one side with a tubo-ovarian mass on the opposite side (figs. 9 and 10). Thickening of the walls of the ampullar portion of the tube was present in the extensive lesions, particularly in pyosalpinx. The isthmian portion at times resembled a pipe stem in feeling, often with nodes present along its course. The fimbriae were found to be closed, partially closed or open. The varying degrees of closure were caused either by adherence to the ovarian surface or by serosal contraction of the fimbriated end which was free.[5]

These free extremities were often found adherent to the broad ligament or adjacent structures. In apparently closed tubes, on close inspection, minute openings were frequently found at the site of the fimbria, with portions of the fimbria protruding but not adherent to each other. In others a contraction ring caused the fimbria to be partially closed. The finding of communicating ovarian cavities with the lumens of the tubes in those cases in which the fimbriae were adherent to the ovaries was unusual. In one specimen a tubo-ovarian cyst or hydrosalpinx with a connecting follicle cyst was present. It was interesting to note the general shape and size of the tubes in the presence of these

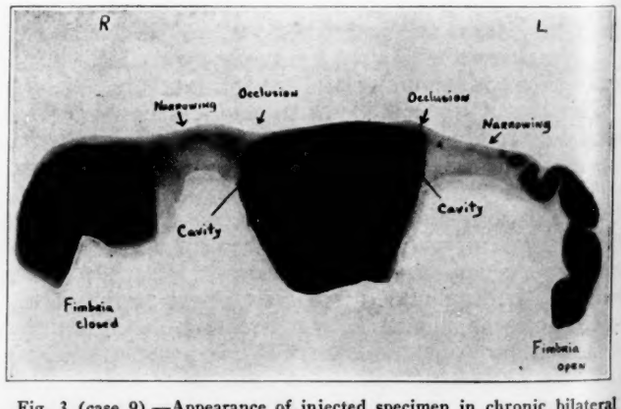

Fig. 3 (case 9).—Appearance of injected specimen in chronic bilateral salpingitis. Smears negative for gonococci. No previous attacks of salpingitis. Present attack started forty-six days before operation. Bilateral cavities at the beginning of the intramural portions with occlusion of the lumen through remainder of intramural portions. Narrowing of lumen on isthmian portions on both sides. Right fimbria closed; left fimbria open.

inflammatory processes. In general, the right tube had more of a semilunar appearance in comparison to the straighter left one. The right tube, on the average, was also considerably larger than the left (figs. 1, 3 and 10). It was noticed, too, that a greater degree of kink-

4. Curtis, A. H.: Surg. Gynec. Obst. **23**: 621-631 (Dec.) 1921.
5. Ries, E.: Am. J. Obst. **60**: 201-212 (Aug.) 1909.

ing in the isthmian portion occurred on the right side. It seemed to us that these variations in shape and size were due to the greater freedom of downward dislocation of the enlarged right tube, while the left was more or less supported by the sigmoid and rectum.

In studying the lumens of the tubes of injected specimens, the occlusions were found to occur in the following locations: In the intramural portion the obstruction varied from a narrowing to a complete

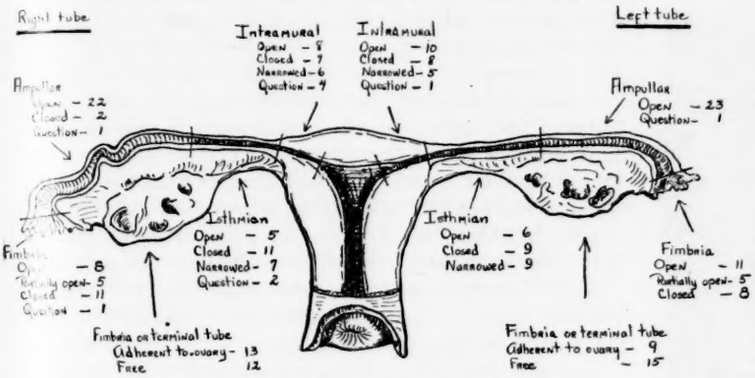

Fig. 4.—Occlusions of the lumen.

closure. Thus, of the forty-nine tubes studied, 30 per cent showed complete closure in this portion, with 22 per cent narrowed. The appearance of a broken line was observed in some and in others a beady appearance was noted. An interesting observation in two instances was the occurrence of cavities along the course of the intramural lumen. In the specimen as shown in figure 3, bilateral cavities, 1 mm. from the beginning of the intramural portion, and 2 mm. in diameter occurred, the lumen being closed beyond to the beginning of the isthmian part. In the specimen as shown in figures 1 and 2, a cavity 3 mm. in diameter occurred in the left tube at the junction of the intramural and isthmian portions, the lumen being patent, coursing into it and from it as shown in the roentgenogram.

In the isthmian portion the occlusions were complete or incomplete, depending on the severity of the infection. Thus, 40 per cent were closed and 32 per cent were narrowed (fig. 4). Minute canaliculi were observed replacing the lumens in several old inflammatory cases. Dilatation of the isthmian part of the lumen was seldom observed even in the hydrosalpinx. This is probably due to its more or less fixed position within the broad ligament and the strong musculature surrounding the lumen. The course of the lumen in this region was frequently tortuous with marked fixed convolutions.

In the ampullar portion the lumen was as a rule dilated, whether the fimbriated end was open or closed (fig. 4). Chronic inflammation seemed to have been responsible for this dilatation, probably owing to distention of the lumen in the acute stage with only partial resolution having taken place at the time the specimen was studied. In only two of the forty-nine tubes studied was the ampullar portion closed, and this may have been due to failure of finding the lumen when the needle was inserted.

The fimbriated end was closed in 38 per cent of the forty-nine inflammatory tubes studied. The occlusions seemed to depend on whether the fimbriae were adherent to the ovary or not; thus, in twenty-two specimens adherent, sixteen, or 72 per cent, were closed. In twenty-seven that were free from adhesions to the ovary, only three, or 11 per cent, were completely closed (fig. 4). The extent of the occlusion varied so greatly in the different specimens that to try to arrive at an average would be of little value. In general, the occlusion varied from 1.5 cm. to 3 cm.

MICROSCOPIC EXAMINATION

The histopathologic changes of chronic salpingitis, as it affects the lumens, are influenced by many factors in addition to the normal complexity of the structure of the fallopian tubes. Malposition of the uterus, and the extent and volume of the inflammation as well as its intensity, play a rôle in the subsequent intrinsic modifications of the wall and lumens. Many interesting changes that involved the character and sizes of the lumens were revealed by microscopic sections made from blocks through the areas in the tubes where the injection materials failed to pass.

Various abnormalities were observed in and about the intramural and isthmian portions of the tubal channels. The lumens here presented varying degrees of narrowing but never complete obliteration. These reductions in caliber varied markedly in shape. Some were oval, others slitlike and still others had bizarre formations. Two were found with multiple openings. In general, the openings were compressed in their vertical diameters. Sloughed epithelium was often found in the form of plugs with associated wandering cells, or lying free as a result of postmortem changes or artefacts, induced by injection. In still others the epithelium showed varying degrees of hypertrophy and hyperplasia as well as regenerative changes. The mucous folds

Fig. 5 (case 10).—Structure of tube with narrowing of the lumen and accessory sinuses all containing bismuth deposits: *T L*, tubal lumen; *A E C*, accessory epithelial-lined cavities.

were fused at their summits and blunted or flattened out apparently according to the chronicity of the inflammatory involvement of the mucosa or perimucosal structures. In two instances in which pocket-like expansions of the lumen were observed in the gross, communicating epithelial lined sinuses were observed to lead out from the original tubal lumens to accessory epithelial lined cavities of variable size. As many as twenty scattered through the wall of the tube, from the lumen to the serosa, could be seen in a single section

(fig. 5). Bismuth was found to be present in these cavities (figs. 5 and 8). They often contained cores of epithelial and wandering cell débris while the inner surface was lined with a new and modified epithelium. The low cuboidal type predominated, although the tall, cilia-free columnar cells were present in a considerable number. Still others had a squamous cell morphology with evident hypertrophy and hyperplasia that indicated regeneration.

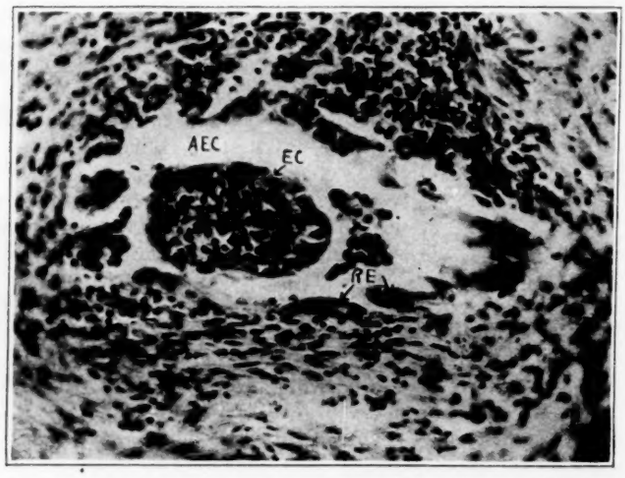

Fig. 6 (case 10).—Character of one of the epithelial-lined cavities with surrounding inflammatory reaction and repair: *A E C*, accessory epithelial-lined cavity; *E C*, epithelial-rimmed core; *R E*, regenerating epithelium around periphery.

The structures surrounding these cavities differed considerably. Some lay in massive collections of polymorphonuclear leukocytes, eosinophils, plasma cells and endothelial leukocytes that replaced the tubal wall structure or pushed it aside. Still others were enclosed in admixtures of similar wandering cells with fibroblasts and smooth muscle. In addition to these, many of the smaller ones were encircled by smooth muscle or fibrous connective tissue without wandering cell infiltration. Such instances were, as a rule, farthest away from the original lumen.

A wide range of structure was observed in the wall about the lumens. In a number of instances there was noted a diffuse hypertrophy of the musculature most marked in the circular layer. In others this was augmented by perivascular fibrosis between the muscle bundles, with here and there sparse collections of wandering cells with the eosinophilic and plasma cell types predominating. In still others the only vestiges of a preexisting inflammatory process consisted of distortion of the muscular pattern by interlacing bands of fibrous connective tissue. Such fibrosis was, in many instances, accompanied by blood vessels with all degrees of occlusions commonly seen in scar tissue. In many of these tubal walls diffuse hyalinization and atrophy associated with varying degrees of edema were noted.

Changes similar to those observed in the intramural and isthmian portions were noted in the ampullar and fimbriated divisions of the tubes. There were, however, none of the accessory epithelial lined cavities here. There was also noted a greater tendency for the processes to occupy the lumens or the perimucosal structures except in the massive inflammatory involvements when the wall was found to be compressed and less extensively infiltrated with inflammatory products. Evidence of tuberculosis was not found in any of the cases.

The constancy of the presence of certain types of wandering cells (eosinophils, plasma cells and endothelial leukocytes) in the light of the gross observations and clinical records leads us to the conclusion that the majority of the instances fall in the category of gonorrheal salpingitis. As the endometrium is the avenue by which acute gonorrheal infection proceeds to the tube, the modifications noted in the intramural and isthmian portions are of especial interest. The expansions of the tubal lumen here into small cavities or ramifying canaliculi emanate, for the most part, from dependent areas. In the isthmian region they extend down toward the broad ligament. It seems probable that mechanical factors are in part operative in determining the direction of burrowing of the infection. Our studies prove the previous suppositions as to the connection of such canaliculi and accessory epithelial lined cavities with the original lumen (injection material in the lumens, figs. 5 and 8). Such disease modifications of the lumens reveal all stages of chronicity. In only one instance were the typical abscess characteristics present (fig. 7). In all others, indications of a well developed healing were present.

A most interesting regenerative power of epithelium is to be noted in these irregularities of the tubal lumens. Aside from the minor desquamations, the epithelium seems to be intact with only partial loss of its cilia and the distortion of its pattern. The rapidity with which it extends into disease-produced cavities even when pus is still present is most remarkable. Epithelial integrity with restoration to a slightly atypical normal often occurs while the surrounding inflammation is still progressive. An indication of the regenerative power of tubal epithelium may be seen in the illustrations taken from the fallopian tubes of two dogs ten days after extensive curettement of the mucosa. This epithelial growth into infected portions of the human fallopian

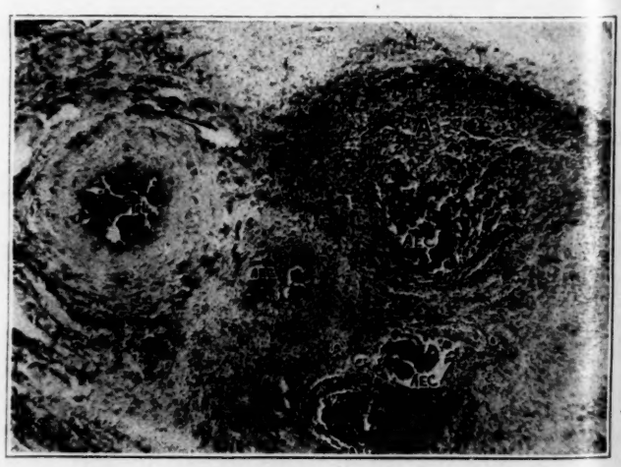

Fig. 7 (case 13).—Chronic salpingitis: Smears were positive for gonococci. No previous attacks of salpingitis. Present attack commenced ten days before operation. *T L*, tubal lumen; *A E C*, accessory epithelial-lined cavities; *A*, abscess formation.

tube is apparently a part of nature's attempt to reestablish the lumen through these obstructed areas which occur at the site of the original lumen or in accessory sinuses produced by the spread of the infection (fig. 6). The vulnerability of the intramural portion and proximal isthmian portion is undoubtedly due to the combined factors of the normally small lumens here, the rigidity of the normal wall and the kinking at the middle of the isthmus as the infection-laden, bulky mass of the distal

portion of the tubes tends to sag into the pelvis. The latter observation is borne out by the frequent vertical flattening of the lumen in the proximal portion of the isthmus.

While the lumens of the fallopian tubes studied showed marked narrowing in the regions of the occlusion seen in the gross, the exact point of obstruction was demonstrated in a limited number of instances. Our observations in the microscopic study of the forty-nine fallopian tubes indicated that the following factors contributed to the occlusion: (1) fusion of the mucous folds by inflammatory expansion and subsequent adhesions; (2) constriction due to pressure of the inflammatory accumulations in the wall outside of the mucosa; (3) multiple inflammatory ramifications of the lumen into the wall of the tube; (4) sloughed cellular débris within the lumens, and (5) valvelike action of swollen mucous tags into the narrowings of the channel. Several or all of these factors were apparently operative in the occlusions studied. Varying degrees of reversal of the pathologic changes were observed and evidences of partial functional reconstruction were seen.

Fig. 8 (case 39).—Chronic salpingitis: Previous attack one year before; *TL*, tubal lumen; *AEC*, accessory epithelial-lined cavities.

Uterine fibroids affecting the cornu of the uterus may also cause distortion of the course of the intramural portion of the lumen producing undesirable angulations, or may encroach on its caliber causing partial or complete closure by external pressure on the tubal lumen. An adenomyoma of the right cornu involved the intramural and the proximal portion of the isthmian parts. The tubal lumen ran through the center of this growth and was occluded by external pressure. The microscopic sections of the tube showed practically no inflammatory reaction.

COMMENT

The information gained as to location, extent, character and resolution of the occlusion of the fallopian tubes in chronic salpingitis leads us to certain speculations as to their clinical rôle and amenability to conservative therapeutic management. As was pointed out in a discussion of the microscopic study, the mechanism of the occlusions differed markedly. The most difficult thing to understand was the various ramifications of epithelial-lined sinuses and cavities in the intramural and isthmian portions. In the majority of such instances studied by us, the contentions of Ries [5] and of Curtis [4] are supported; namely, that these ramifications of the lumen are outward inflammatory extensions rather than wolffian body extensions into the lumen, as is contended by Recklinghausen.[6] In some of the instances, however, the possibility of remnants of the wolffian body being the basis for the accessory epithelial-lined cavities was borne out by the fact that such channels were found without appreciable surrounding inflammation. It is difficult in such instances to establish these changes as evidence of restitution in

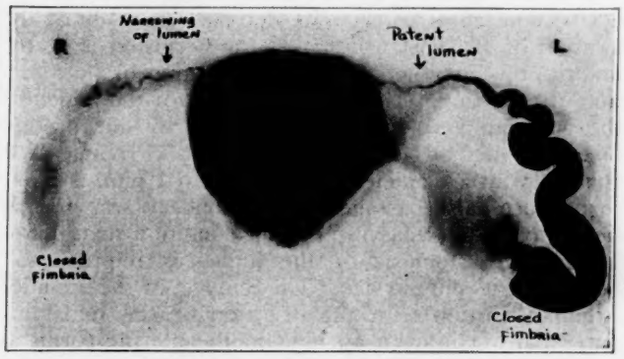

Fig. 9 (case 10).—Injected specimen in chronic bilateral salpingitis illustrating narrowing of lumen of isthmian portion of right tube. Smears were negative for gonococci. No previous history of salpingitis but pelvic symptoms began two years ago. Present attack began forty-five days previous to operation. Injection of outer portion was prevented by mutilation. Fimbria closed. Left lumen patent throughout with exception of fimbria, which is closed by adhesions to surface of ovary.

a healed process. There can be no doubt as to the probable rôle of such irregularities of the lumen as cavities, sinuses and multiple passages in the causation of tubal pregnancy. Nor can one ignore these changes as factors in sterility. That such modifications of the tubal lumens in the intramural and isthmian portions in part determine the extent of the pathologic changes which occur distally is also evident.

This study further demonstrated the fact that there is an active regenerative process occurring after the inflammatory condition has reached its height. As all specimens of salpingitis were in the chronic state, we believe that, if further conservative treatment had been carried out, complete resolution of the lumen might

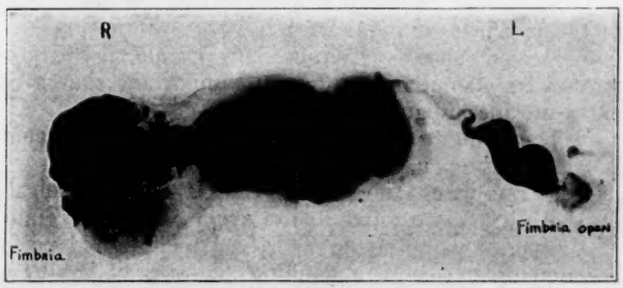

Fig. 10 (case 38).—Chronic bilateral salpingitis with adhesions plus adherent retroversion. Smears were negative for gonococci. Two previous attacks of salpingitis. Lumen of right tube obliterated except dilated ampullar portion. Two attempts at injection from tubal end were made, but lumen of isthmian region would not inject. Tube and ovary bound together in one mass. Lumen of left tube patent throughout its extent with patent fimbria. Fimbriated end was adherent to the posterior leaf of the broad ligament.

have taken place in not a few instances. That the fimbriated end has the power to resolve and become patent is shown by the fact that the fimbriae were seen in several stages of resolution. When adherent to the ovary it would seem that there is less chance for the

6. Recklinghausen, F. D., and Freund, W. A.: Adenomyome des Uterus, Berlin, A. Hirschwald, 1896, quoted by Ries.

recovery of patency. When free, multiple openings were frequently found at the site of the ostium with fimbriae protruding and little gross evidence of adhesions of these fimbriae to one another. In some cases in which complete resolution of the lumen had occurred, the tube was bound down by inflammatory adhesions to the posterior surface of the broad ligament and adjacent structures. The freeing of such a tube surgically would offer hope of the return of function.

Surgery directed to reestablish the lumen should not be done until an accurate diagnosis is made of the location of the obstruction. If the occlusion is at the fimbria, this may be opened by separation or by resection of a portion. The reestablishment of the lumen of the isthmian and intramural portions by our present operative methods is not satisfactory. Probing of a channel with a diameter of from 0.5 to 1 mm. is likely to produce false passages with secondary scar formation, leaving the tube in no better condition than it was before. Anastomosis of the lumen is impracticable because of its minute size. The removal of the occluded isthmian portion with the insertion of the remaining outer portion into an opening in the uterine cornu as recommended would not only leave a weakened uterine wall, but the resulting contraction of the scar in the cornu would seem to contract down and obliterate the newly formed channel. Conservative management, with the regenerative processes which follow the eradication of the infection originally causing the obstruction, seems to offer the greatest hope of reestablishment of the lumen of the isthmian and intramural portions. Insufflation or the injection of fluids through the lumen may aid in reopening the channel.

SUMMARY AND CONCLUSIONS

1. Forty-nine fallopian tubes were studied with reference to occlusions of the lumens.
2. A method of demonstrating the extent, character and resolution of the occlusions by the injection of bismuth, is presented.
3. Occlusions of the lumen may occur in any portion of the tube.
4. The most frequent site of occlusion is in the isthmian portion.
5. Resolution of the lumen depends on the absorption of the products of inflammation.
6. Healed abscess cavities and canaliculi demonstrated by bismuth injections are important causes of extra-uterine pregnancy.
7. The fimbriated end when not adherent to the ovary is frequently open or partially so.
8. In our cases, tubo-ovarian abscesses communicating with abscess cavities in the ovary were not found.
9. Operations to reestablish the lumen should never be contemplated until a definite diagnosis of the location of the obstruction is made.
10. Surgery to reestablish the lumen of the tube is not satisfactory when the occlusion is located in the intramural or isthmian portions.

Medical-Dental Building

ABSTRACT OF DISCUSSION

DR. L. E. BURCH, Nashville, Tenn.: About ten years ago, Curtis of Chicago demonstrated that gonococci could not be found in the tube after the temperature and leukocyte count had returned to normal limits, and today the authors have shown us the great regenerative power of the tubal epithelium. Both of these papers show what will happen with conservative treatment. It has happened to me in the past on more than one occasion to advise the removal of tubes and then at a later date see these patients conceive in the very tubes that I had advised removal. The tubal cavities shown by the authors are most interesting. It is also important to remember that 72 per cent of tubes were occluded that were adherent to the ovary and only 11 per cent were occluded that were not adherent to the ovary. I heartily endorse the authors' conservative views, and I should like to emphasize again the importance of conservatism in the management of pelvic inflammation. In pelvic inflammation the foci of infection in Skene's ducts, Bartholin's glands and the cervix should be eliminated and the tubes treated in a palliative way. I trust that the authors will continue their study along this line. I should like to make one suggestion, and that is that they take a like number of normal tubes, which can be procured from postmortem material or possibly from fibroid cases, and use these as controls and see whether they will throw any additional light on tubal occlusion.

DR. ARTHUR H. CURTIS, Chicago: The thought that physicians are going forward with conservatism in the treatment of tubal disease of gonococcal origin must be pleasing and encouraging to all. Great interest should be shown in the extension of glandular pockets into the wall of the tube, away from the lumen. I discovered, years ago, by making serial sections and longitudinal sections through the fallopian tubes after gonococcal infection, that the many glandular nests in the wall of the tube all connect with the lumen and serve as possible pockets for entrapping impregnated ova, thus predisposing to tubal pregnancy. I would urge great care in the use of iodized oil. I fear that nation-wide employment of this diagnostic aid will be followed with an aftermath of inflammatory reactions. I plan always, in infectious processes in which the disease is limited to the genitalia, to avoid iodized oil or similar solutions if I am relatively positive concerning the pathologic condition. I have known of several instances in which iodized oil was injected and operation followed rather shortly thereafter, in which the peritoneal reaction was found to be very severe. Instillation of iodized oil is a diagnostic measure of value but must be used with a great deal of caution. My experience is that operations for relief of sterility on diseased tubes are usually futile unless the fimbriated ends of the tubes can be opened. If it is only the fimbriae that are occluded and they can be teased open by blunt dissection, there is excellent prospect of relief of the sterility. But very nodular or markedly enlarged tubes are not usually amenable to surgical relief of sterility. I favor the instillation of iodized oil in those cases in which there are no palpable pathologic changes in which detailed information is required in anticipation of operative relief of sterility.

DR. EMIL NOVAK, Baltimore: I was interested in the illustrations of the glandlike invasion of the tubal musculature. Such pictures are not uncommon in inflamed tubes, being apparently produced by the exaggerated proliferative activity of the tubal epithelium because of the inflammation. In other cases, more particularly at the cornu, the inclusions are found to consist of what are apparently typical endometrial glands, surrounded by a mantle of what is equally typical endometrial struma. The latter picture is similar to that seen with the ordinary adenomyoma of the uterus, with which it is probably identical. I would emphasize, as Dr. Curtis has done, that, while tubal disease should be treated as conservatively as possible, the outlook for fertility in the ordinary gonorrheal type is not especially good. And this in spite of the fact that, even with isthmian inflammatory changes, a lumen still is present, as demonstrated by tubal insufflation or injection. It is perhaps true that formerly even more pessimism was felt, for it was taken for granted that isthmian inflammatory changes would practically always obliterate the lumen in that portion of the tube. It has been this consideration, indeed, which influenced many physicians from any frequent use of the operation of salpingostomy. Why open up the fimbriated end if the tube is closed near the uterus? If, however, the uterine end is often patent, as recent work indicates, there would be justification for a more frequent resort to salpingostomy in an effort to relieve sterility. One other point may be stressed, and that is the difference in prognosis as between gonorrheal and streptococcal cases. The latter are very frequent, espe-

cially in these days of criminal abortion. Those who, through error in diagnosis or otherwise, have been unfortunate enough to open the abdomen in cases of streptococcal infection of the tubes, will recall that the tubes have been large, with enormous interstitial involvement, and massive thickening of the broad ligaments (cellulitis), but with little involvement of the mucosa, and usually a patent orifice. Tubes of this type often undergo resolution, and subsequent pregnancy is common. With gonorrhea the inflammation is primarily from within, with destruction of the mucosa and early sealing of the tubes, so that the outlook, as far as fertility is concerned, is much less favorable.

DR. NATHAN SEARS, Syracuse, N. Y.: Dr. Curtis mentioned a point which I think should be stressed. A few years ago I was treating a young maried woman for acute gonorrhea. In the course of time it became necessary or convenient for her to go to another city, and while there she visited another physician, who in the midst of this acute infection felt it necessary to determine the patency of her tubes. She is now sterile, is leading a very unhappy married life, and recently, in order to satisfy partially her desire for motherhood, has adopted a child. Too much emphasis cannot be placed on the care with which any of the methods are used for determining the patency of the fallopian tube in the presence of any known infection in the pelvis.

DR. RAYMOND E. WATKINS, Portland, Ore.: In the cases studied, we found that occlusions of the lumen occurred more frequently in all portions of the right fallopian tube; that is, there were more occlusions of the intramural, the isthmian and the fimbriated ends on the right side than in the corresponding portions of the left. This is probably of some significance, for I noticed this afternoon, in the paper on extra-uterine pregnancy, that it was stated that extra-uterine pregnancies had occurred more frequently on the right side. We interpreted the more frequent occurrence of right-sided occlusions as being due to the fact that the sigmoid probably prevented the left fallopian tube from dropping down deep into the pelvis. This may in some way be a factor in drainage or perhaps by some other means. In any event, the left tube is less frequently occluded. We also found the right inflammatory mass larger than the left in the majority of cases.

HABITUAL DISLOCATION OF THE SHOULDER

RESULTS OF TREATMENT, ESPECIALLY BY THE TENOSUSPENSION OPERATION *

MELVIN S. HENDERSON, M.D.
ROCHESTER, MINN.

Habitual dislocation of the shoulder occurs rarely, and its occurrence following ordinary traumatic luxation is not known. In 1921 and again in 1926 I[1] reported cases in which operation had been performed at the Mayo Clinic; a total of thirty patients were operated on. The present report includes further observations on the patients of this series, and on seven additional patients on whom operations have been performed since 1926.

ETIOLOGY AND PATHOLOGY

The one definite etiologic factor in the thirty-seven cases was that of primary traumatic dislocation; most of the patients attributed the dislocation to severe trauma, fall or violence. French observers insist that congenital malformation of the humeral head can generally be found, but I have not been able to substantiate this observation, and such experience has not been common in this country. General examination occasionally disclosed slight atrophy of the deltoid muscle and roentgenologic examination disclosed slight roughening or notching of the head of the bone at the upper margin which was attributed to trauma incident to the numerous dislocations. Defects in the glenoid cavity have been advanced as a cause, but proof of this by roentgenograms or by observations at operation has been lacking. It is my belief that the large majority of habitual dislocations is due to laxness of the anterior inferior portion of the capsule, but I have been unable to demonstrate this to my satisfaction in performing capsulorrhaphy. However, my conception of what the tension of the normal capsule of the shoulder should be is equally hazy, since the opportunity is seldom afforded of examining the normal shoulder capsule in the living. It is difficult to produce a dislocation by passive motion in a case of habitual anterior dislocation, even when the patient is anesthetized. I have tried to do it in a number of instances

Fig. 1.—Incisions used in the shoulder.

and succeeded only once. Voluntary muscular action is necessary, such as takes place when the shoulder assumes the position of forward abduction, a weak part in the capsule permitting the head to luxate. On the other hand, in cases in which posterior, "snapping" dislocation takes place, it is easily produced by passive motion.

SYMPTOMS

Usually the history given by the patient is that the primary dislocation was produced by severe trauma, and that following the reduction the arm either was not protected or it was protected for a short time only. The pain is severe and unrelieved until reduction is effected. The second dislocation may be produced by equally severe trauma, but as a rule subsequent dislocations occur without trauma or violence. The simple act of reaching forward for some object at about the level of the shoulder is the most common movement

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* From the Section on Orthopedic Surgery, the Mayo Clinic.
* Read before the Section on Orthopedic Surgery at the Eighty-First Annual Session of the American Medical Association, Detroit, June 25, 1930.

1. Henderson, M. S.: Habitual or Recurrent Dislocation of the Shoulder, Surg. Gynec. Obst. **33**: 1-7 (June) 1921; "Tenosuspension" for Habitual Dislocation of the Shoulder, Surg. Gynec. Obst. **43**: 18-25 (July) 1926.

causing dislocation. Swelling seldom follows, soreness lasts for a few days only, and pain due to involvement of the nerves does not occur. In a few of the cases dislocation was produced so easily that the patients were sometimes awakened from sound sleep by it. In

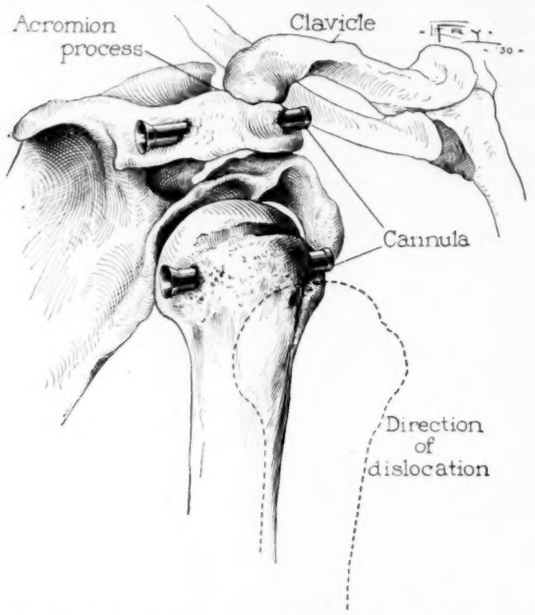

Fig. 2.—The drill holes in the acromion process and the head of the humerus; the cannulas are in place.

one case only was primary dislocation produced without trauma, and this occurred when the patient jumped over a fence, the shoulder slipping out when he elevated his arms to balance himself. Although reductions become easier as dislocations become more frequent, a particularly difficult reduction, in which the difficulty is often due to bunglesome attempts at reduction, may be the cause of the patient consulting the surgeon for relief.

Tavernier [2] emphasized the importance of distinguishing clearly the habitual dislocations from the occasional recurring dislocations due to trauma which do not carry an unfavorable prognosis and which do not indicate treatment other than that of simple reduction. Until the dislocations are really habitual, surgical measures should not be urged.

Habitual dislocations are almost always of the subcoracoid type, the head resting under the coracoid process. Posterior dislocations are not common, are not so painful and may be of the snapping type. Twenty-five of the patients in the series were males and twelve were females. Twenty-nine of the patients were between the ages of 20 and 40 years. The duration of the complaint varied from six months to twenty-five years, and the number of dislocations varied from 2 to 100 or more. It can be appreciated how severely the patient's endurance has been taxed by 100 dislocations, and by the uncertainty which he feels concerning the likelihood of their occurrence.

2. Tavernier, L.: The Recurrent Luxation of the Shoulder, J. Bone & Joint Surg. **12**: 458-461 (April) 1930.

TREATMENT

Conservative treatment is limited to the wearing of an apparatus that acts as a check to abduction and forward elevation of the arm. If nocturnal dislocations occur, and especially if epilepsy is a complication, the apparatus must be worn at night. Occasionally, shoulders which have dislocated two, three or four times will, under such a regimen, lose the habit, and the patients will not have further trouble. Too often, however, the dislocations become increasingly frequent, and it is then that surgical intervention is indicated. In some cases in which only a few dislocations have occurred the patients had a feeling of insecurity and apprehension that justified operation.

One has only to review the literature and read the descriptions of the numerous ingenious methods that have been devised for the treatment of habitual dislocation of the shoulder to realize that the results of surgical intervention have not been altogether satisfactory. Because of the rarity of the condition, it is unusual for one surgeon or one clinic to be able to base an opinion on a large series of cases; so the reports of other observers, even though the cases are few, are read with much interest. That is my reason for publishing, from time to time, data concerning results in these cases. My experience with the condition now extends over more than eighteen years.

Structurally, the shoulder joint is weak, and the bony support is practically nil. The only bony check is furnished by the acromioclavicular process which stops upward dislocation: therefore, muscular tonicity and the capsule must furnish the chief stability. The operations devised for the prevention of dislocations may be divided more or less satisfactorily and arbitrarily into five types: (1) those performed on the bony structures; (2) those performed on the capsule; (3) muscle transference and muscle lengthening; (4) check and block operations, bony or ligamentous, and (5) suspension operations.

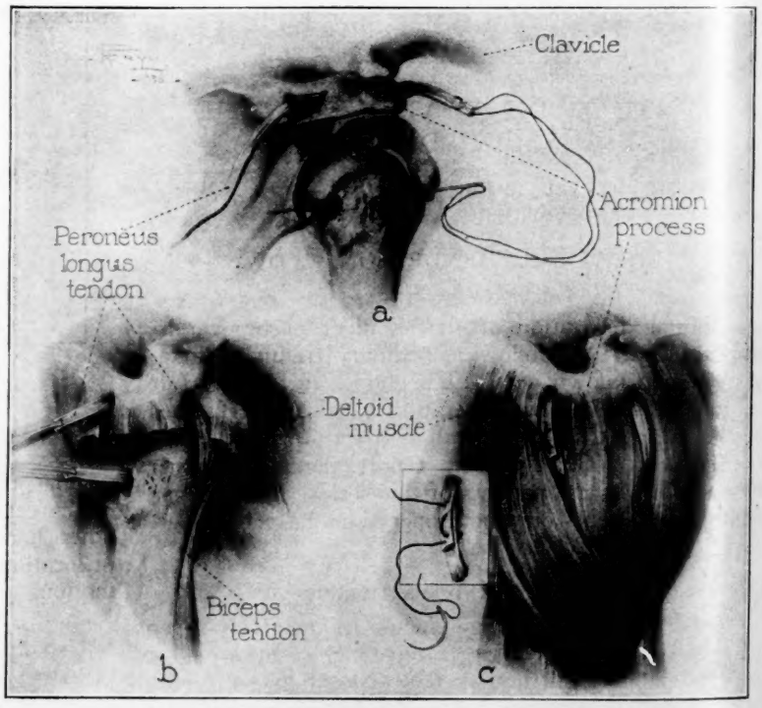

Fig. 3.—Method of inserting the strip of peroneus longus tendon.

Operations on the Bony Structures.—Only brief consideration need be given such radical procedures as arthrodesis and excision of the head of the bone. I excised the head in a patient who was epileptic and had suffered numerous and distressing dislocations in epileptic seizures. The head was distorted, the result of a fracture which had occurred from a roughly executed reduction. Excision through the anatomic neck relieved the patient. Hildebrand,[3] many years ago, by deepening the glenoid fossa from behind and thus making more prominent the anterior margin, aimed to prevent the head from dislocating. Eden [4] and Speed [5] accomplished the same thing by placing a bone graft along the anterior inferior margin of the glenoid fossa. They reported favorable results. I have had no experience with this type of operation, so I do not feel qualified to judge of its merit.

Operations on the Capsule.—Under this heading are included only those operations that deal with the capsule alone. Most of the dislocations are anterior, and reefing the capsule (anterior capsulorrhaphy) has been advocated for many years. Ricard,[6] in 1894, advanced this method and Thomas [7] has been an ardent exponent of the procedure. When the dislocation is posterior, posterior capsulorrhaphy is performed. Capsulorrhaphy, as will be noted, has been performed in the clinic in a considerable number of cases.

Muscle Transference and Muscle Lengthening.—Attempts have been made to utilize some of the powerful muscles or portions of them so that the muscular action will prevent dislocations. Clairmont's [8] well known operation of this type consists of dissection of the posterior fourth or fifth of the deltoid muscle, along with a portion of its insertion, lifting it upward, then tunneling through the quadrilateral space of the posterior axillary fold and fastening the muscle to the coracoid process, thus making a muscular sling for the head. In my experience, the chief criticism of this operation, aside from the necessity of two good-sized incisions and considerable dissection, has been the difficulty of getting muscle of sufficient length so that it be could be fastened readily to the coracoid process. Frequent failures caused me to abandon the operation. It should be noted, however, that if the procedure is successful the results are most satisfactory, because of the full and normal range of motion that is finally attained. I attribute the failures to the difficulties of technic and the tendency for degeneration in the distal portion of the transplanted muscle.

Heymann [9] attacked the problem by transplanting the short head of the biceps from the coracoid process, fastening it securely to the upper rim of the glenoid fossa, and sewing it to the capsule. He contended that the action of this muscle tends to reinforce the capsule and thus prevents dislocations. He mentioned six patients, all soldiers, who were cured so far as he knew; the follow-up data were not definite.

Young [10] expressed the belief that if the pectoralis major and latissimus dorsi were lengthened, the mechanics which produce dislocation would be altered. This operation is now out of favor.

Check and Block Operations.—On the supposition that a check to prevent abduction will prevent dislocation, Gallie and Le Mesurier [11] devised an operation whereby a hole is drilled anteroposteriorly through the neck of the scapula. Through this hole is threaded, from behind forward, a piece of fascia lata, knotted at the end. This is carried down and fastened through another drill hole to the under surface of the humerus, the exact site to be determined by the surgeon, who judges as to the amount of abduction to be permitted. This ligament acts as a check to abduction and thus prevents the arm from assuming the position of forward abduction in which dislocations occur. The objection that may readily be raised to this procedure is that restriction of motion is permanent.

On the premise that a block in the path of the dislocating head would stop the dislocations, a bony block was devised by Oudard [12] and elaborated on by Lenormant.[13] Briefly, their operation consists of splitting the coracoid process and elongating it so that it forms a block shaped like an elephant's trunk, against which the head impinges as it slips downward and forward in a typical subcoracoid dislocation.

Suspension Operations.—It has been logically argued that if the head can be suspended to the bony arch above and so prevented from slipping downward dislocation will not occur. This hypothesis has resulted in a number of operations, some simple and some complicated. Spitzy [14] aimed to provide suspension by the aid of an artificial ligament, namely, wrapping silk around the surgical neck of the humerus, knotting it in front, and running the long ends of the strands up and fastening them to the coracoid process, at the same time overlapping them with the capsule.

Carrell [15] described a rather complicated but ingenious operation, whereby the long head of the biceps tendon is divided and the distal end sewed to the short head. The proximal end of the divided tendon is further elongated by a strip of fascia lata which is carried posteriorly through the axilla, swung up and fastened through a drill hole to the acromion process behind. A simpler operation described by Nicola [16] appears to be sound. He divided the tendon of the long head of the biceps, drilled a hole which extended from the bicipital groove below upward to the middle of the head, and through this drill hole pulled the tendon of the long head of the biceps and fastened it to the distal end of the severed tendon at the lower end of the tunnel. He informed me that it has been used about twenty times by himself and others, with uniformly good results.

Joseph,[17] in 1917, employed fascia lata to make an extra ligament running from the head of the humerus

3. Hildebrand: Beiträge zur operativen Chirurgie, Arch. f. klin. Chir. **66**: 347-376, 1902.
4. Eden, Rudolf: Zur Operation der habituellen Schulterluxation unter Mitteilung eines neuen Verfahrens bei Abrisz am inneren Pfannenrande, Deutsche Ztschr. f. Chir. **144**: 269-280 (March) 1918.
5. Speed, Kellogg: Recurrent Anterior Dislocation at the Shoulder: Operative Cure by Bone Graft, Surg. Gynec. & Obst. **44**: 468-477 (April) 1927.
6. Ricard, quoted by Tavernier (footnote 2).
7. Thomas, T. T.: A New Method of Excising the Head of the Humerus, Ann. Surg. **66**: 492-495 (Oct.) 1917.
8. Clairmont: Ueber neue Operationsmethoden bei habituellen Schulterluxation, Wien. klin. Wchnschr. **30**: 1507 (Nov. 22) 1917.
9. Heymann, E.: Zur Behandlung der habituellen Schulterluxation, Zentralbl. f. Chir. **54**: 1411-1414 (June) 1927.
10. Young, J. K.: Recurrent Dislocation of the Shoulder-Joint, Ann. Surg. **63**: 375 (March) 1916.
11. Gallie, W. E., and Le Mesurier, A. B.: An Operation for Relief of Recurring Dislocation of the Shoulder, Tr. Am. S. A. **45**: 392-398, 1927.
12. Oudard: La luxation récidivante de l'épaule (variété antéro-interne), Presse méd. **1**: 201-202 (Feb. 15) 1928.
13. Lenormant, C.: Luxation récidivante de l'épaule traitée par le procédé d'Oudard modifié: Résultat après six mois, Bull. et mém. Soc. nat. de chir. **54**: 31-33 (Jan.) 1928.
14. Spitzy, Hans: Stabilization of the Shoulder Joint for Habitual Dislocation, Surg. Gynec. Obst. **46**: 256-257 (Feb.) 1928.
15. Carrell, W. B.: Habitual Dislocation of the Shoulder, J. A. M. A. **89**: 948-952 (Sept. 17) 1927.
16. Nicola, Toufick: Recurrent Anterior Dislocation of the Shoulder: A New Operation, J. Bone & Joint Surg. **11**: 128-132 (Jan.) 1929; Recurrent Dislocation of the Shoulder: Its Treatment by Transplantation of the Long Head of the Biceps, Am. J. Surg. **6**: 815 (June) 1929.
17. Joseph, Eugen: Eine neue Operation zur Verhütung der habituellen Schulterverrenkung, Berl. klin. Wchnschr. **1**: 525 (May 28) 1917.

to the acromion process. I have performed and described an operation of the same character, "tenosuspension," so called because true tendon, the peroneus longus, is used instead of fascia lata. A strong piece, half thickness to full thickness of the tendon, is placed through holes bored through the acromion process or even through the acromioclavicular articulation and the head of the humerus, providing a strong ligament that interferes with the motion of the shoulder little if any.

Tenosuspension was performed in twelve of the cases. Two of the operations are too recent to be reported on and therefore are excluded from consideration. The time elapsing from operation to the latest report varies from six months to six years: in one case the time since operation is six years; in one, five years; in one, four and a half years; in one, three and a half years; in one, two years; in two, one year; in two, eight months, and in one, six months. Three patients in the group were subject to epileptic seizures.

The technic of tenosuspension is simple and is facilitated by the proper instruments. I am convinced that the success of the operation depends on using a piece

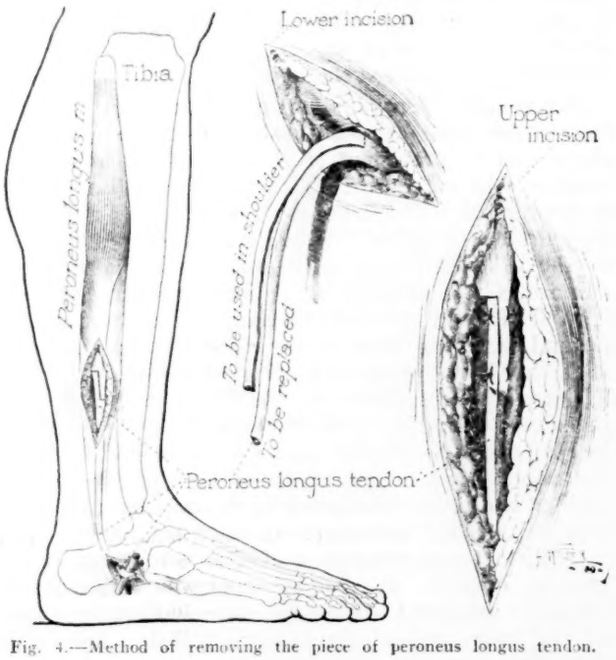

Fig. 4.—Method of removing the piece of peroneus longus tendon.

of strong tendon, such as the peroneus longus, and seeing to it that the ends of the tendon are sewed snug but not tight enough to cause necrosis, and that the tendon is roughened sufficiently on its smooth surface so that it will grow tight to the bony channel in which it is placed. Several failures occurred in treatment of lax acromioclavicular and sternoclavicular articulations following suture through drill holes with fascia lata, but none occurred if a piece of the peroneus longus was used. Because of these early experiences, I have never used the fascia lata in suspension operations on the shoulder, feeling that it is generally inadequate to withstand the strain. I am confident that the failures and consequent discredit to this type of suspension operation are due to the fact that fascia lata was used instead of peroneus longus or, if tendon was used, that the tendon was not well placed. I have had no experience with the operation of Nicola, but it appears to be logical and sound, and it will be interesting to note results as it comes into more common use.

For tenosuspension, the patient is placed on the sound side between sandbags, with the affected shoulder uppermost. The skin is prepared in the ordinary manner and towels are arranged so that the head of the patient is covered; the anesthetist also is draped out of the field. The forearm and hand are wrapped in a sterile sheet, so that the arm can be moved around at will. The leg on the same side is prepared from the knee down so that incisions can be made for removal of the peroneal tendon. A tourniquet is not used on the leg.

One incision is made posteriorly, extending from the posterior aspect of the acromion process downward onto the head of the humerus. Two small incisions are made in front, one is made over the acromial area, and another over the head of the humerus (fig. 1). Parallel holes are then drilled through the acromion process or even through the acromioclavicular joint and through the head of the humerus (fig. 2). A cannula one-fourth inch in diameter is pushed through each drill hole so that the tendon will pull through easily (fig. 3).

The tendon is obtained from the peroneus longus by aid of two small incisions, one in the lower third of the leg and one over the tendon as it courses along below, and a little forward of, the external malleolus. The tendon is loosened through the upper incision and cut with a step, and with curved forceps is further loosened in its sheath and is pulled out through the lower wound. Approximately half of this tendon is then removed for the making of the autogenous ligament. The remaining portion is then pulled back upward through its sheath behind the external malleolus and the stepped ends fastened together (fig. 4). I have found that it is not necessary to use the entire thickness of the tendon as it is larger than is really necessary, and the saving of half of the tendon will offer assurance that there will be no weakness of the leg. It has been my experience, however, that removal of the entire tendon can be carried out without causing any subsequent weakness of the ankle provided the distal and proximal ends are fastened to the peroneus brevis, for the tendon of that muscle is adequate for function.

The wounds are closed, dressings are applied in the usual manner, and the arm is held to the side for approximately eight to ten days, when some movement is permitted. Abduction to a right angle is not permitted for five or six weeks. If the patient is subject to epileptic seizures, protection should be given for three or four months.

COMPARISON OF END-RESULTS FOLLOWING OPERATIVE PROCEDURES

The data presented here have been gathered in the last eighteen years (from 1912 to 1930), and comprise forty operations on thirty-seven patients (tabulation). Two types of capsulorrhaphy have been performed, the anterior and the posterior. The posterior operation is done on the posterior part of the capsule for posterior dislocations, and the anterior operation is done on the anterior part of the capsule through an anterior approach for anterior dislocations. There were sixteen anterior operations and three posterior. Six of the sixteen patients (37.5 per cent) have remained well over a period of more than ten years, the last operation having been done in 1920. Four patients report that they are better, and six report failure. Such a small percentage of success is not satisfactory. The three patients on whom posterior capsulorrhaphy was performed were cured. Eight

Clairmont operations, all more than five years ago, resulted in four cures. In this group also the percentage of success is too low. The operation described by Young was done in two cases, with failure in both. In the case in which the head of the bone was excised the result was good. Of the twelve instances in which tenosuspension has been done, ten patients are apparently relieved of all symptoms, and although some have complained of a certain limitation of abduction in the shoulder, the majority have an excellent and practically normal range of motion. As has been said, the other two operations were done too recently to justify a report. Therefore, from my experience, there seems to be little argument as to which operation is the best. Time will tell, of course, whether all patients on whom tenosuspension was performed will continue in satisfactory condition, but I believe that failures will be due to faulty technic. The technic as now practiced is simple and quickly carried out. The joint is not opened. The use of the peroneus longus muscle does not produce subsequent disability. Two of our patients were boxers and both were able, after tenosuspension operations, to participate in boxing

Results of Forty Operations for Habitual Dislocation of the Shoulder

Operations	Cures Effected		Improvement Only, Number	Failure, Number	Total
	Per Cent	Number			
Capsulorrhaphy:					
Anterior	37.5	6	4	6	16
Posterior	100.0	3	..	..	3
Clairmont	50.0	4	1	3	8
Young	....	..	..	2	2
Excision of head	100.0	1	..	..	1
Tenosuspension..	100.0	10	..	..	10
Total		24	5	11	40*

* Number of patients operated on, thirty-seven.

matches, with no weakness in their legs or ankles. In case of dislocation subsequent to operation, from whatever cause, the result is listed as a failure.

SUMMARY

The report comprises forty operations on thirty-seven patients. Anterior capsulorrhaphy, done on sixteen patients for anterior recurring dislocation, resulted in cure in 37.5 per cent; all of these operations were done more than ten years ago. Three patients who underwent posterior capsulorrhaphy for posterior dislocation remained well. Of eight patients who underwent Clairmont operations more than five years ago, 50 per cent were cured. Tenosuspension performed on ten patients has resulted in cure in 100 per cent of cases to date; in two cases the operations have been done for more than five years; in two, for more than three years; in one, for more than two years; in two, for more than one year; in two, for more than eight months, and in one, for more than six months. The success of the operation depends on the careful placing of a strong piece of the tendon of the peroneus longus muscle to act as a suspension ligament through drill holes in the acromion process and the head of the humerus. The incisions can be kept small in size, which is a worthy consideration in women.

ABSTRACT OF DISCUSSION

DR. FREMONT A. CHANDLER, Chicago: Henderson's experience is unique in many respects: first, the remarkably large number of cases presenting this unusual condition; secondly, the opportunity for comparison of several types of operations for the relief of this condition, and, thirdly, the careful end-result study and analysis that he made. Anatomically the shoulder joint is dependent on its capsular and muscular structures for stability throughout its wide range of motion, with the exception of the uppermost quadrant, which is protected by the acromion process. That a point of weakness of supporting structures exists in the antero-inferior quadrant is generally recognized and accounts for the frequency of subcoracoid luxations. Recurrent dislocations in epileptic patients are usually associated with the tonic spasms of the attack and may give no history of preceding trauma to the shoulder. In the nonepileptic cases a definite history of shoulder trauma may be elicited, and the secondary dislocations are usually associated with voluntary abduction, such as throwing the arm out for a tackle in football, or raising the arm for an overhead stroke or service in tennis. In this position the head of the humerus rests against a defective fulcrum, and dislocation follows the contraction of the muscles acting on the upper end of the humerus. Impingement of the greater tuberosity on the acromion process also levers the head from the glenoid. Frequently reduction is easily effected by the patient, and as violent sport is avoided, no considerable disability is present. In other cases the dislocation may be severe and a phobia may develop, as in dislocations of the patella. The treatment by tenosuspension, if properly carried out, is not difficult, and the results are satisfactory, a ligamentous sling from the acromion process preventing pressure at the point of capsular weakness. Capsulorrhaphy in the shoulder, as in the knee and hip, is not easy to do efficiently. Transplants of portions of the deltoid through the quadrilateral space below the head of the humerus to the corocoid process are extensive procedures, and it is unreasonable to expect the muscle tissue to do other than atrophy, leaving no firm tissue to reinforce the capsule. Bone blocks at the margins of the glenoid have great merit mechanically if they are large enough to build up the anterior and inferior quadrants, a procedure not easily accomplished by most operators. The loop operations of Carrell and the ligamentum teres operation of Nicola successfully employ the principle of suspension so favorably reported by Dr. Henderson.

DR. W. B. CARRELL, Dallas, Texas: Dr. Henderson's method of suspension is on a sound mechanical basis, fairly simple in application. His results warrant its acceptance as a good operation. The use of fascia instead of tendon, as suggested, causing failure in some cases, may be further emphasized. Five years ago I had two failures in athletic men, on whom the humerus had been suspended with fascia. At the time I attributed the failure to inadequacy of the method for patients who would later follow strenuous athletic sports. On exposure of the shoulder in both cases, the fascia was intact as a fibrous cord but long enough to permit partial subluxation. With tendon, the result might have been different. To correct this recurrence, an operation was devised which seemed to have the features of a suspension combined with a reefing of the capsule. In addition, the suspension feature had more direct support by anchorage to the glenoid, looping under the neck and suspended to the acromion. The method is described in the literature, and my results in a limited number of cases have been 100 per cent in preventing dislocation and excellent as regards free motions in the shoulder. Of ten patients, four were athletes who subsequently played football, and two were epileptic. The last two had tendon instead of fascia transplant, but all have held satisfactorily. My impression now is that I prefer the Henderson operation in the average case and my own method for the athletic patient. With the enthusiasm of authorship I have convinced myself that it is not a difficult procedure, but I am convinced that the surgeon without this incentive will find Dr. Henderson's technic less difficult to follow accurately.

DR. R. O. RITTER, Chicago: My experience with the tenosuspension operation has been very limited. I have had some experience with suspension by fascia lata, which has not been entirely satisfactory because there have been partial dislocations at various times. My experience with nine or ten Clairmont operations has been excellent in all cases except one. These have included football players and men playing professional ball. One of these patients remained intact for three years after the operation. He dislocated his shoulder at the end of that time by catching a moving street car. He was thrown violently to the ground and was picked up with a dislocation

of the shoulder. Recently I have had the experience of using the long head of the biceps tendon according to Nicola, and I was impressed with the ease with which it is done. It is all executed through one incision, being done rapidly, easily and without much bleeding, which is much to be desired in an operation of this kind. The Clairmont operation is too much of an operation; there is too much exposure of tissue and too much bleeding. The fault, perhaps, with the Nicola operation is the point that Dr. Henderson mentioned. Dr. Henderson's incisions are very small, making the scar formation inconspicuous. The Nicola operation makes a rather long scar, which would be a distinct disadvantage in women. Whether this biceps tendon will stand the strain, I do not know. The one I did was done just two weeks ago. The patient was epileptic and whether the tendon will stand that strain I am not sure. The wound healed perfectly, without any reaction or swelling, and the patient says that his arm feels more secure than it did. I think, as far as the ease and rapidity with which the operation can be done is concerned, that using the long head of the biceps is very satisfactory.

Dr. Melvin S. Henderson, Rochester, Minn.: Dr. Carrell's operation is a suspension operation, but it has the additional advantage of being somewhat of a capsulorrhaphy. There seems little doubt that if the operation is properly done and the different steps are accomplished as they should be, it will relieve the condition. The only criticism, if it could be called a criticism, that I have of it is that it is rather complicated. I forgot to mention in my presentation, although it is in the text of my paper, Nicola's operation. It appears to me to be a simple and practical procedure, and I shall watch the final results with much interest. We have not tried it at the Mayo Clinic because we desired first to test thoroughly the tenosuspension operation herein described. The results that I am able to report I believe entitle the tenosuspension operation to a position well in the front rank in the somewhat large number of operations described for habitual dislocation of the shoulder. For tenosuspension, the peroneus longus should be used and not fascia lata. If the latter is used, it is not a tenosuspension. I think fascia lata is entirely inadequate and will not fulfil the duties put on it.

CHRONIC ANTERIOR UVEITIS

CLINICAL OBSERVATIONS *

M. N. BEIGELMAN, M.D.
LOS ANGELES

Chronic anterior uveitis is one of the few ocular lesions that have no standardized, uniformly accepted nomenclature. This disease, which has been in the last twenty years the subject of numerous investigations, mostly pathologic, is characterized by: (1) a slow insidious course, so that years may pass without any serious visual impairment; (2) a primary involvement of the anterior part of the uveal tract, iris and ciliary body; (3) a lack of acute inflammatory signs and symptoms, such as pericorneal congestion, pain, photophobia and lacrimation, and (4) the presence of precipitates on the posterior surface of the cornea. The lack of irritation is only relative: not infrequently the eyeball becomes congested and the patient complains of some discomfort or pain. The same is true regarding the precipitates that are found in chronic anterior uveitis in most instances, but not necessarily in every case. The fundamental and permanent characteristics, the chronicity of the process and the localization in the anterior part of the uvea are well embodied in the name accepted for the present discussion, "chronic anterior uveitis."

* Read before the Section on Ophthalmology at the Eighty-First Annual Session of the American Medical Association, Detroit, June 27, 1930.

It is surprising how much confusion still exists in ophthalmic literature with regard to this matter of nomenclature. The "hydromeningitis" of Wardrop [1] and the "aquocapsulitis" of de Wecker [2] are terms not used any more except as curiosities, but "descemetitis" and "punctate keratitis" with and without quotation marks can be still found in modern textbooks and articles. Both these terms are entirely inadequate because they substitute a corneal condition for a uveal lesion. "Serous iritis" is another prevalent term for chronic anterior uveitis, although the ciliary body is affected in this condition as much as the iris (the same argument is valid in reference to Shieck's [3] "iritis obturans"), and the exudate in chronic anterior uveitis is not serous but distinctly cellular. For the same reasons Ball's [4] classification of the disease as a "serous cyclitis" cannot be accepted, particularly his interpretation of it as a "catarrhal inflammation of the ciliary glands." In the light of newer slit lamp investigations the term simple "cyclitis," introduced long ago by Fuchs in place of "serous iritis," is also discredited, and in his latest contribution on this subject Fuchs [5] himself speaks in favor of the term "uveitis" rather than either "iritis" or "cyclitis."

NONSPECIFIC TREATMENT OF CHRONIC ANTERIOR UVEITIS IN LATE SYPHILIS

In his monograph on "Syphilis and the Eye," Igersheimer [6] discusses the subject of chronic anterior uveitis due to syphilis in very few words, emphasizing its great rarity: ". . . whereas genuine serous iritis as a specific inflammation is very rarely observed" (während reine Iritis serosa, als specifishe Entzündung, sehr selten beobachtet wird). Although Ridley (cited by Igersheimer [6]), Mayou,[7] Urbanek [8] and others have given considerable attention to syphilis as an etiologic factor in the origin of chronic anterior uveitis, I adhered for some time to Igersheimer's opinion, and in my own work cases of chronic anterior uveitis in syphilitic patients were particularly scrutinized as to any other possible cause of the uveal lesion. However, in at least five cases of chronic anterior uveitis observed in my private practice in the last four years, a thorough examination failed to reveal any other etiology of the uveitis except the syphilitic infection. In two cases some foci of infection were found, but their removal had no effect on the course of the uveitis. In view of the wide variety of ocular lesions caused by syphilis, I felt justified in assuming that the uveitis in these cases was also syphilitic in origin. It is interesting to note that in all of them the general syphilitic infection was of long duration, from fourteen to thirty-two years. One patient presented early signs of tabes; another, those of dementia paralytica. The condition was obviously a late ocular complication in syphilis, quite different from the usual type of acute iridocyclitis in the secondary stage. The tendency to parasyphilitic manifestations observed in this small series of cases is also worth mentioning because it has a bearing on some therapeutic considerations.

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6. Igersheimer, J.: Syphilis und Auge, Berlin, 1928.
7. Mayou, S.: Discussion on the More Chronic Forms of Anterior Uveitis, Brit. M. J. **2**: 1324 (Oct.) 1910.
8. Urbanek, Josef: Die Bedeutung der Tuberculose für die entzündlichen Erkrankungen des Uvealtractus, Berlin, 1929.

In four of the five cases antisyphilitic treatment was given and, although it was conducted vigorously and for a prolonged period, no improvement could be noticed. Therefore, in two cases nonspecific therapy was resorted to with the most encouraging results:

CASE 1.—D. H., a man, aged 40, contracted syphilis about twenty years before and since then had been treated systematically. Nov. 26, 1927, the condition of the left eye was as follows: visual acuity, counting fingers at 5 feet; no pericorneal congestion; precipitates on the posterior surface of the cornea; pupillary reactions sluggish; opacities in the anterior part of the vitreous.

A thorough physical examination, including tuberculin tests (Dr. Herman Sugarman), did not reveal any other pathologic change except early tabetic signs. Antisyphilitic treatment was continued for a period of more than six months. The eye was meanwhile getting worse, until the patient lost projection of light, and a complicated cataract developed. Eight injections of a preparation of lactalbumin were then given without any general or focal reaction. It was only in April, 1928, that the tuberculin treatments were started. Shortly after that the precipitates started to disappear, the exudate in the anterior chamber rapidly absorbed, and the projection of light was restored. In January, 1930, I performed an uneventful extraction of the cataract with a resulting visual acuity of 20/100.

CASE 2.—Mrs. H. M., aged 61, was referred to me on account of severe pain in the left side of the head. On examination the tension of the left eye was found to be increased. There were precipitates on the posterior surface of the cornea, some of them pigmented. The anterior chamber was very deep; the pupillary reactions were sluggish. In the vitreous a few floating opacities were found.

On general examination by Dr. H. J. Gunderson, the patient presented numerous signs of incipient dementia paralytica. The blood Wassermann reaction was suspicious, and the spinal fluid was definitely positive. No foci of infection could be detected; the tuberculin test was negative. Antisyphilitic treatment failed to relieve the eye condition. The patient was hospitalized, and typhoid vaccine was used intravenously. Within four weeks the only remains of the chronic anterior uveitis were slight corneal opacities in the part in which precipitates were adherent to Descemet's membrane for a long time.

In this case the action of typhoid vaccine was obviously nonspecific. In case 1 some further elucidation of its therapeutic aspects seems to be advisable. The success of tuberculin therapy in case 1 brings up the question whether or not the uveal lesion was of a tuberculous nature, particularly because of the prevailing opinion (Urbanek, von Hippel,[9] Gilbert[10] and others) that tuberculosis is the chief etiologic factor in chronic anterior uveitis. It must be remembered, however, that in this case the tuberculin test was negative, that no evidence of systemic tuberculosis was found, and that in the ocular lesion no clinical suggestion of tuberculosis, such as iris nodules or retinal perivasculitis, could be detected. On the other hand, it was known to ophthalmologists long before the theory of nonspecific protein therapy came into existence that, in some typical syphilitic cases of parenchymatous keratitis, tuberculin was more effective than mercury or iodides. That one nonspecific agent, lactalbumin, failed to produce any reaction, while the use of the other one, tuberculin, resulted in a complete cure, is a fact worthy of serious consideration. In a previous communication I[11] emphasized the fact that at the present state of our knowledge the use of nonspecific agents is no more than a clinical experiment. Neither the type of protein to be employed nor the dosage and intervals or even the mode of use is definitely established, and in no case can the effect of the nonspecific agent be foreseen. What is needed for further advancement in this field is less speculation and more facts, properly studied and critically analyzed. That is why I am omitting entirely the tempting analogy between the use of nonspecific agents in progressive paralysis and their use in ocular manifestations of late syphilis, limiting myself to the following statement: that nonspecific therapy is of distinct value in the management of chronic anterior uveitis, which is likely to occur in late syphilis more frequently than has hitherto been admitted.

9. Von Hippel, E.: Ueber tuberculose, sympathisierende und proliferierende Uveitis unbekannter Aetiologie, Arch. f. Ophth. **92**, 1917.
10. Gilbert, W.: Die Erkrankungen des Uvealtractus, Berlin, 1922.
11. Beigelman, M. N.: The Untoward Effects of Protein Therapy in Ophthalmic Practice, California & West. Med. **30**: 404 (June) 1929.

RETINAL DETACHMENT IN THE COURSE OF CHRONIC ANTERIOR UVEITIS

In the terminal stage of chronic anterior uveitis the eyeball, when totally blind and painful, is often enucleated. A pathologic examination in these cases reveals frequently a more or less complete separation of the retina (Gilbert, von Hippel) which cannot be diagnosed clinically because of the opaque media: dystrophic cornea, complicated cataract and dense vitreous opacities. This type of retinal detachment does not differ in any way from the one commonly found in atrophy of the eyeball and is caused by the organization of massive exudates in the vitreous and in the retina itself. Strictly speaking, it is not to be considered as a complication of chronic anterior uveitis, since in the terminal stage of the latter condition there is a generalized severe plastic uveitis, as well as advanced degenerative change in various tissues of the eyeball.

In the available literature I found only one case of retinal detachment complicating the early course of chronic anterior uveitis—that observed and described in 1928 by Ernest Thomson.[12] As to the reports of Heine,[13] Lauber,[14] Lowenstein[15] and Schall[16] on retinal detachment caused by uveitis, it must be stated that in their cases the inflammatory process was localized in the posterior part of the uvea rather than in its anterior portion. In addition, all of them were of tuberculous origin, and Schall, who has made the most thorough investigation of this subject, reports that the primary changes have taken place in the retina itself, in the form of extensive periphlebitis.

Under these circumstances I feel justified in reporting three cases of retinal detachment diagnosed ophthalmoscopically in a comparatively early stage of chronic anterior uveitis:

CASE 3.—H. M., a man, aged 29, appeared in my office, May 5, 1928, complaining of poor vision in the left eye. On examination a typical picture of chronic anterior uveitis was found in the left eye. There was little irritation; a number of precipitates were present on the posterior suface of the cornea; the pupillary reaction was sluggish, and the vitreous had many floating opacities. No changes were found in the fundus. The intra-ocular pressure was 12 mm. (Schiötz). A thorough physical examination failed to reveal any definite disorder. The tuberculin test, however, was positive and tuberculin treatments were advised. Locally, hot applications, atropine, ethylmorphine hydrochloride and subconjunctival injections of sodium chloride were administered. Within the next two months the

12. Thomson, Ernest: Unilateral Chronic Anterior Uveitis in Children: A Clinical Note, Brit. J. Ophth. **12**: 189 (April) 1928.
13. Heine, L.: Klinisches und Anatomisches zur Frage der Amotio Retinae, besonders der Heilungsvorgänge, Klin. Monatsbl. f. Augenh. **72**: 305, 1924.
14. Lauber, H.: Ein Fall von doppelseitiger tuberkul. Uveitis mit Netzhaut-Ablösung, Klin. Monatsbl. f. Augenh. **70**: 246, 1923.
15. Lowenstein, A.: Aetiologie und Behandlung der Netzhaut-Ablösung, Klin. Monatsbl. f. Augenh. **73**: 784, 1924.
16. Schall, E.: Ueber Ablatio Retinae bei Tuberculose, Arch. f. Ophth. (von Graefe's) **109**: 205, 1922.

condition of the left eye greatly improved, and the visual acuity came up from counting fingers at 2 meters to 20/100.

July 7, 1928, the patient came in complaining that he had suddenly noticed an increase in the amount of floating opacities in the left eye. On examination the eye was found to be unusually soft, 6 mm. (Schiötz), the media fairly clear, and the fundus without any changes. The next day a detachment of the lower part of the retina was diagnosed. The type of detachment was serous; no retinal tear could be detected. The intra-ocular pressure was 8 mm. In the next few months the detachment gradually progressed until the perception of light was totally lost.

Case 4.—E., a man, aged 54, came to consult me from the state of Sonora, Mexico, because he was gradually losing sight in the right eye. A mild noncomplicated case of chronic anterior uveitis was diagnosed. All foci of infection had been previously eliminated without any effect on the eye; the tuberculin test was doubtful; the blood Wassermann reaction was + + +. The usual local care and vigorous antisyphilitic treatments were advised.

In four weeks the patient returned complaining that he could not see the upper part of objects in front of him. On ophthalmoscopic examination a serous detachment of the whole lower half of the right retina was found. From subsequent communications I have learned that the patient has lost the sight in this eye entirely.

Case 5.—C. H., a man, aged 28, healthy and robust, presented on examination, March 11, 1929, the picture of chronic anterior uveitis in the left eye. The sight in this eye was reduced to counting fingers at 2 feet. Both the cornea and the vitreous were sufficiently opaque to make a detailed ophthalmoscopic examination difficult. However, no gross fundus changes could be diagnosed. The patient remained under my care for only a short time. He returned in about six months with a loss of light perception in the upper half of the visual field of the right eye. It was with great difficulty that the detached retina could be detected in the opaque vitreous.

In the next few months a secondary hypertension due to complete seclusion developed.

In considering the possible mechanism of retinal detachment in these cases, the so-called primary exudation due to choroiditis might be eliminated first. As Leber [17] pointed out, this type of retinal separation is characterized by a prompt and permanent reattachment of the retina. In the three cases reported the detachment progressed from bad to worse and resulted, in all, in complete blindness.

Traction by organized exudate has been mentioned already as the causative factor of retinal detachment in the terminal stages of chronic anterior uveitis. But in the early part of this condition there is no evidence, either clinical or pathologic, that a cicatrization sufficient to displace the retina is taking place, and an assumption to the contrary is hardly justified. Turning to the facts that may help in elucidating the pathogenesis of retinal detachment in the foregoing cases, we must first consider the changes in the vitreous body. In all these cases signs of vitreous liquefaction, such as floating opacities, hypotony and deepened anterior chamber, were present. From a liquid vitreous the fluid may under certain circumstances become absorbed through direct contact with the choriocapillaris whenever a tear is formed in the retina, or possibly through the epithelial surface of the ciliary body. On another occasion, I [18] discussed the factors that might cause or facilitate this absorption. Once a sudden loss of vitreous has occurred, the rigidity of the intact sclera will not allow the eyeball to collapse, and a transudation from the choroid with a resulting retinal detachment may take place. I admit that this assumption is no more than a working hypothesis, but it seems to have a firmer foundation than any of the previously mentioned views. It is of particular interest that in case 3, in which the onset of the separation was observed step by step, a surprisingly sudden hypotony had taken place immediately before the retina became detached, as though the contents of the eyeball diminished at once.

17. Leber, T.: Die Krankheiten der Netzhaut, Leipzig, 1916.
18. Beigelman, M. N.: Acute Hypotony in Retinal Detachment, Arch. Ophth. **1**: 463 (April) 1929.

TRANSIENT MYOPIA IN CHRONIC ANTERIOR UVEITIS

John Green [19] was the first to call attention, in 1887, to the transient myopia occurring in connection with iritis. In his own case of bilateral iritis, Green noticed in the period of convalescence that his impaired distance vision could be greatly improved by concave glasses of about —1.75 diopters. This refractive change persisted for six weeks, while atropine was being used freely. A similar transient myopia was subsequently observed by Green in many of his patients. Strangely enough, this interesting observation, which could be easily studied in a large amount of material, failed to arouse the interest of ophthalmologists. Outside of a casual mention of "accommodative myopia" by Eversbusch [20] in 1906, nothing was done until 1922, when Sédan [21] discussed this phenomenon in detail.

In the same year Ellett [22] reported the first case in which temporary myopia preceded the onset of sympathetic ophthalmia. In 1925 Marchesani,[23] not knowing of Ellett's contribution, described two identical observations, and finally in 1929 Swab [24] gave a detailed history of a similar case.

The following is the first report on transient myopia observed as the earliest sign of chronic anterior uveitis, when no other evidence of the latter condition could be detected:

Case 6.—Miss A. S., aged 28, Negro, came to the clinic of the Eye and Ear Hospital of Los Angeles complaining that in the preceding three days she had become "nearsighted." On examination the left eye was found totally blind as the result of a severe plastic uveitis. There was a seclusion and occlusion of the pupil; organized exudate was present in the anterior chamber, and the cornea was cloudy. In the right eye the media were perfectly clear and the fundus was normal. With a —3.00— D. she had a visual acuity of 20/20. A spasm of accommodation was suspected and the patient was given atropine which, however, proved to be ineffective. A week later the aqueous was found to be somewhat cloudy, and minute deposits appeared on the posterior surface of the cornea. A typical chronic anterior uveitis developed, while the "myopic" condition of the eye gradually disappeared.

Obviously the condition in this case was a refractive change due to an increased convexity of the lens. A spasm of accommodation, admitted by some investigators, has been disputed by others because of the fact that the condition was not influenced in any way by the use of atropine. In Nicati's [25] opinion the underlying cause of "transient myopia" is a paralysis rather than a spasm of the ciliary muscle: the anterior part of the ciliary body, in which the muscle for "distance accommodation" is situated, becomes affected first, and its

19. Green, John: On a Transient Myopia Occurring in Connection with Iritis **4**: 599, 1887.
20. Eversbusch: Pentzoldt-Stintzings Handbuch der gesamten Therapie, Berlin, 1911.
21. Sédan, J.: Myopie inflammatoire à la suite d'une iritis syphilitique, Marseille méd. **59**: 871, 1922.
22. Ellett, E. P.: Report of Two Cases of Sympathetic Ophthalmia Presenting Unusual Features, Tr. Am. Acad. Ophth. & Otolaryng. **27**: 203, 1922.
23. Marchesani, O.: Beiträge zur sympathischen Ophthalmie, Ztschr. f. Augenh. **57**: 44, 1925.
24. Swab, M.: Sympathetic Ophthalmia with Myopia as Initial Symptom, Am. J. Ophth. **11**: 461 (June) 1928.
25. Nicati, W.: Physiologie oculaire, Paris, 1909.

paretic condition results in an overaction of the antagonist—the deeper lying muscle for "near accommodation." Whether Nicati's explanation of the origin of "transient myopia" in uveitis is agreed with depends on whether or not one accepts his views on the anatomy and physiology of the ciliary muscle.

The onset of transient myopia following a uveitis can be observed without difficulty, but it is only the patient who has lost the sight in one eye, as in sympathetic ophthalmia, who will report with a refractive change preceding a uveitis. The accumulation of similar observations in the course of chronic anterior uveitis is of importance because it points toward a primary involvement of the ciliary body, with a possible subsequent spreading of the inflammatory process either through continuity or through an excretion of the causative agent (bacteria, toxins) into the intra-ocular fluids.

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STRYCHNINE POISONING IN CHILDREN *

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Strychnine is not generally considered as a cause of fatal convulsions in small children. But little is said of this form of poisoning in textbooks on pediatrics, although it occurs in infants more than in older children and adults. The two cases here reported show a number of features in common with the other cases of strychnine poisoning that occur in this country each year.

I have been chiefly interested in the number of cases, the age incidence, the manner of poisoning in children, the laws regulating the sale of strychnine, and the prophylactic measures that might be attempted to lessen the number of these tragedies that seem to occur each year.

CASE 1.—A. M., a girl, aged 2 years, was brought in convulsions to my office by her mother, Dec. 8, 1928. The mother had noted at 4:30 p. m. that the child appeared "frightened by a vacuum cleaner and was unable to walk as usual." Soon the baby fell, becoming stiff and rigid. The convulsions had since been constant. At first the parents could remember nothing unusual that the child had eaten. After the child was in the hospital, they did recall that between 1 and 2 p. m. she had eaten several cathartic tablets that a physician had given to the grandfather. The tablets had been left in a drawer and the child had been found at the open drawer with tablets in her hand. The parents had not at the time considered the ingestion of a few cathartic tablets as dangerous. There was no warning on the containing envelop, nor had they been warned to keep the tablets from the child. The child was admitted to the hospital at 5:20 p. m.

She was so hypersensitive that the least manipulation aggravated the convulsions. No complete physical examination was made, as the child was under constant treatment for convulsions. There was rigidity of all muscles; the face and legs were cyanotic. No risus sardonicus was present. The pulse was 140; the respiration, 45. The legs were abducted, the toes in flexion. There was spasm of the arms and legs. The pupils were widely dilated. The convulsions were constant.

Treatment consisted of morphine, a hot bath, colonic irrigation and lavage. The condition seemed slightly better; the cyanosis and muscle spasm became less. The child became cyanotic while the tube was in the stomach, the muscles stiffened, and the child died suddenly at 6:35.

The autopsy showed hypostatic congestion of dependent parts and cyanosis. The hands were clenched, the feet inverted, the toes drawn down, and the abdomen distended. There was extensive congestion and edema of the lungs. The left ventricle and the auricles were relaxed. There was general congestion. Three pills were found partly digested in the stomach. Some edema of the meninges was present. Each sugar coated pill contained aloin, ¾ grain (0.05 Gm.); extract of nux vomica, ½ grain (0.03 Gm.), and extract of belladonna, ⅛ grain (0.008 Gm.). The number of tablets taken was not known.

CASE 2.—W. C., a boy, aged 4 years, seen with Dr. John Finigan, May 4, 1929, arose before the parents in the morning. No one saw him take any tablets. About 7:15 a. m., the child was taken with convulsions and was brought to the hospital about 8. A bottle which had contained Hinckle's cascara tablets was found empty. It was estimated to have contained about ninety tablets. Each tablet contained strychnine sulphate, 1/60 grain (0.001 Gm.); aloin, ¼ grain (0.016 Gm.); podophyllum, 1/5 grain (0.013 Gm.); extract of belladonna, ⅛ grain (0.008 Gm.); cascarin, ¼ grain (0.016 Gm.), and ginger 1/16 grain (0.004 Gm.). The past history was negative. The child probably took ninety tablets containing 1½ grains (0.09 Gm.) of strychnine and 11 grains (0.7 Gm.) of extract of belladonna. This must have been between 6 and 7 o'clock. He called his mother and began to have convulsions at 7:15. The convulsions continued until 8:45 or 9, at which time they were under the control of gas and oxygen or chloroform. An anesthetist was present until 1 p. m. to keep the severe convulsions under control. The patient's temperature was 103 F.; the pulse rate was 120, and the respiration 24. The pulse later went up to 180 and the respiration to 40.

Morphine and magnesium sulphate were given. Stomach washing gave a large amount of dark brown return smelling strongly of cascara. The patient relaxed and would keep quiet for several minutes after an anesthetic. The pupils were at first widely dilated. The skin was flushed; this cleared up first. Toward the afternoon the pupils became smaller. He died suddenly at 2:40 p. m. after resting quietly for some time. The temperature at death was 109.5 F.

Medication consisted of morphine and 25 per cent magnesium sulphate, 4 cc. subcutaneously at 9 and 11:30 a. m. Magnesium sulphate was given also by mouth. Colonic irrigation gave fair results. No autopsy was obtained.

It is evident that both strychnine and belladonna poisoning was present in each case. In neither case was diarrhea found; in fact, the returns from irrigations were unsatisfactory.

Each of the children, unknown to their parents, ate sugar-coated cathartic tablets intended for adults. The parents were unaware that the tablets contained poison and had taken no special care to keep them away from their children. This is not an unusual occurrence.

INCIDENCE

The number of cases reported in medical literature does not show the incidence of strychnine poisoning in children. A physician is not likely to see a series of cases and, owing to the brief duration of the condition in fatal cases, they are not under supervision long enough for extensive examinations and reports. The accident is investigated by the coroner and the only general report is that in the daily press.

In an analysis of sixty cases of drug poisoning admitted during a six year period to the Hospital for Sick Children at Toronto, Murray [1] reports fourteen cases due to strychnine with three deaths. "One quarter of the sixty cases and nearly one-half the deaths were due to strychnine poisoning." The cases of strychnine poisoning were all due to A. B. S. & C.

* From the Pediatric Department of the Genesee Hospital.
* President's address, read before the Rochester Pediatric Society, May 9, 1930.

1. Murray, L. M.: An Analysis of Sixty Cases of Drug Poisoning, Arch. Pediat. 43: 193-196 (March) 1926.

pills, the usual formula of which is aloin, ½ grain (0.03 Gm.); extract of belladonna, 1/16 grain (0.004 Gm.); strychnine, 1/120 grain (0.0005 Gm.), and extract of cascara sagrada, ½ grain (0.003 Gm.). While occasional cases with recovery are reported, the incidence of the condition is best shown by mortality statistics. Unfortunately, in most states, strychnine poisoning is listed under number 177 in the international list of causes of death with strychnine under subdivision 7 (others). As a result, no records of deaths from strychnine are recorded or can be obtained and and 1928 were 178, 179 and 189, respectively. In Rochester there were fifteen such deaths reported from 1911 to 1929. Seven were males and eight were females. Eleven were children under 5 years of age and of these six were under 2 years of age. In 1924, seventy deaths due to accidental poisoning occurred among children from 1 to 4 years of age who were insured in the Industrial Department of the Metropolitan Life Insurance Company.[2] Definite information as to the type of poison was reported in fifty-seven of the cases. Strychnine caused twenty-four deaths. Seven

TABLE 1.—*Accidental Poisonings of Children Five Years of Age and Under in New York State (Exclusive of Greater New York) During 1926, Classified Under International List 177*

1926

Kind of Poison	Age	Statement of Cause of Death
Arsenic (rat paste)	4	Acute toxemia from arsenic poisoning accidentally drunk
Atropine	1	Atropine poisoning accidental
Belladonna	1	Poisoning from eating pills composed of aloin, belladonna and strychnine
Camphorated oil	6 mo.	Poisoning from accidental administration of camphorated oil by mouth
Caustic potash	1	Accidental poisoning by taking caustic potash
Lye	1	Lye poisoning accidentally
Lye	1	Lye poisoning
Phosphorus	3	Poisoning; swallowed a piece of fireworks; accidental
Phosphorus	3	Poisoning; swallowed a piece of fireworks; accidental
Phosphorus	2	Poisoning of phosphorus from eating nigger-chasers
Pitch	2	Poisoning by eating pitch
Soldering fluid	1	Complete obstruction of pyloric end of stomach causing starvation (drank some soldering fluid)
Strychnine	11 mo.	Strychnine poison
Strychnine	19 mo.	Strychnine poison from cathartic tablets accidentally
Strychnine	1	Convulsions due to eating a number of tablets of strychnine
Strychnine	1	Accidentally poisoned from eating strychnine tablets
Strychnine	1	Accidentally poisoned by strychnine sulphate
Strychnine	2	Took 8 or 10 tablets of strychnine by mistake
Strychnine	2	Strychnine; swallowed cathartic tablets; accidental
Strychnine	2	Probably strychnine poisoning; accidental
Strychnine	3	Strychnine poisoning; accidental
Strychnine	1	Accidental poisoning by strychnine
Strychnine	1	Strychnine; swallowed six tablets containing strychnine poison
Strychnine	1	Strychnine poison
Strychnine	1	Poisoning; aloes and strychnine accidental
Strychnine	1	Strychnine poison accidental

Deaths of children under 5 years of age from tetanus, 5; rabies, 0

1927

Kind of Poison	Age	Statement of Cause of Death
Arsenic (rat paste)	5	Picked up package of rat poison in alley while playing
Arsenic (rat paste)	1	Eating a piece of bread with rat poison on it
Arsenic (rat paste)	4	Arsenic poisoning (rat paste) accidentally
Arsenic (rat paste)	1	Eating rat poison accidentally
Boric acid	2 days	Poisoning nursed from mother's nipple used as a wash
Horse chestnuts	3	Cholera infantum poison from eating horse chestnuts
Kerosene	1	Child drank from a can having a mixture of kerosene oil and pea juice—ptomaine
Compound solution of cresol	1	Poisoning by compound solution of cresol; accidental
Compound solution of cresol	1	Poisoning; child secured a bottle of liquid
Mercuric cyanide	1	Poisoning; mercuric cyanide eaten by a child—fireworks
Methyl salicylate	9 mo.	Methyl salicylate poisoning; accidental
Phosphorus	2	Phosphorus poisoning (rat poison); accidental
Phosphorus	2	Phosphorus poisoning (rat poison); accidental
Strychnine	3	Accidental strychnine poisoning
Strychnine	3	Accidental poisoning by strychnine
Strychnine	5	Accidental strychnine poison
Strychnine	1	Strychnine poison
Strychnine	3	Accidental strychnine poisoning
Strychnine	1	Probably strychnine poison (accidental); Codemene tablets
Strychnine	1	Accidental strychnine poisoning
Strychnine	3	Convulsions due to Blaud pills; strychnine poison; accidental
Strychnine	5	Accidental poisoning, strychnine
Strychnine	2	Strychnine poisoning; accidentally ate 15 Hinckle's Cascara
Strychnine	1	Accidentally ate medicine containing strychnine
Strychnine	2	Accidental strychnine poison
Strychnine	4	Accidental poisoning—pills; symptoms of strychnine
Watkin's Grippe Tablets	1	Poisoned by Watkin's Grippe Tablets; accidental

Deaths of children under 5 years of age from tetanus, 5; rabies, 0

1928

Kind of Poison	Age	Statement of Cause of Death
Arsenic (rat paste)	1	Phosphorus and arsenic poisoning; rat paste accidentally eaten
Arsenic (rat paste)	2	Phosphorus poison; rat paste
Gasoline	1	Gasoline poisoning; drank it accidentally
Kerosene	10 mo.	Kerosene drunk accidentally
Lye	2	Lye; accidental
Compound solution of cresol	1	Compound solution of cresol; accidental
Mercury (fireworks)	2	Mercury; eating Victory Snakes; fireworks
Methyl salicylate	2	Accidental overdose of methyl salicylate
Methyl salicylate	2 mo.	Methyl salicylate poisoning from oil of wintergreen to relieve colic
Morphine sulphate	10 mo.	Unknown quantity of morphine sulphate
Muriatic acid	1	Drank it at play
Phosphorus	19 mo.	Phosphorus poison
Seed of jimson weed	4	Poisoning from eating seed of jimson weed
Strychnine	2	Strychnine poisoning; Hinckle's Cascara containing strychnine
Strychnine	1	Strychnine poisoning; accidental
Strychnine	1	Strychnine poisoning; baby found bottle of nux and iron pills
Strychnine	2	Strychnine; took strychnine tablets which belonged to mother
Strychnine	4	Strychnine poison; mistake
Strychnine	1	Strychnine poisoning; child ate Blaud and strychnine tablets intended for adults
Strychnine	2	Accidental strychnine poisoning
Strychnine	3	Strychnine; took tablets by mistake
Strychnine	4	Strychnine poison; took pills for candy
Strychnine	1	Strychnine tablets; accidental
Strychnine	1	Strychnine pills taken accidentally
Strychnine	3	Strychnine poisoning; accidental
Poison (kind unknown)	3	Nature of poison unknown (sediment from maple sugar)
Poison (kind unknown)	4	Nature of poison unknown (sediment from maple sugar)

Deaths of children under 5 years of age from tetanus, 2; rabies, 0

it is not possible to show causes, age incidence and other interesting details. It would seem that strychnine poisoning should be listed separately to bring out its importance as a cause of accidental deaths in children. The Bureau of Census does show the incidence of strychnine poisoning in the death registration area of the United States, but no tabulation is made of these deaths by ages nor are the circumstances of the poisoning indicated.

The registration area in 1928 covered 95.4 per cent of the total population of the United States. The number of cases of strychnine poisoning for 1926, 1927 of these children had eaten cathartic pills and three tonics containing strychnine. "It is truly astonishing to find so many deaths from strychnine poisoning, indicating that this cause, though perhaps not the commonest type of poisoning found among children, is certainly the most important from the standpoint of fatality."

In answer to our inquiry concerning the figures for 1926, 1927 and 1928, the statistical bureau of the

2. Strychnine, the Most Important Cause of Fatal Poisoning Among Children One to Four Years of Age, Statistical Bulletin, Metropolitan Life Insurance Company **6**: 1-2 (April) 1925.

Metropolitan Life Insurance Company [3] reported as follows: Of 726 deaths due to accidental poisoning, 273 (38 per cent) were in children under 5 years of age, 142 (nearly 20 per cent) in the second year of life. Definite information as to the kind of poisoning was obtained in 241 of the 273. Of these 82, or about one third, were due to strychnine, giving an average of 27 per year. Forty-six of the eighty-two deaths were shown to be due to cathartic or other tablets containing strychnine.

TABLE 2.—*Poisoning in New York State Exclusive of Greater New York*

	Accidental Poisoning (Int. List 177)		Strychnine Poisoning		
Year	All Ages	Five Years and Under	All Ages	Five Years and Under	Population
1926	107	26	14	14	5,395,153
1927	88	27	15	13	5,495,387
1928	102	27	13	12	5,595,000
	297	80	42	39	

Another valuable key regarding age incidence and cause of strychnine poisoning is given in a tabulation obtained from the Division of Vital Statistics of the New York State Department of Health,[4] showing the deaths in children aged 5 years and younger, recorded in international list 177 for New York State exclusive of Greater New York (table 1).

In 1926, 1927 and 1928 there were 297 deaths due to accidental poisoning listed under list 177 for all ages. Eighty of these occurred in children 5 years of age and under. Of these thirty-nine are recorded as due to strychnine and, as one other was listed under belladonna in A. B. & S. tablets, forty cases can be reported as due to tablets containing strychnine.

In twenty-one of these cases it is recorded that the children ate tablets accidentally and as several others "ate medicine containing strychnine" it is likely that they also were poisoned by tablets. Twenty of the forty children were under 2 years of age. The tablets indicated are cathartic or tonic prepared for adult use.

As we were unable to secure the figures for poisoning under 5 years of age for the United States, an attempt was made to estimate the number in table 3.[4] The figures thus obtained for children under 5 years of age are considerably higher than the figures obtained from the census bureau. This may indicate that this type of poisoning is more common in New York, but it does show that nearly all these deaths occurred in children 5 years of age and under.

The death rate does not show the true incidence of poisoning and the cases in which the children recover are not reported. Many children recover from strychnine poisoning. In the Toronto series [1] there were but three deaths in fourteen reported cases of strychnine poisoning; the same ratio would indicate a general average of about 850 such accidents in the United States death registration area each year. Our mortality is probably higher because many of our tablets contain more strychnine than the A. B. S. & C. reported as the cause of poisoning in all the Toronto cases.

It is not uncommon to have fatal convulsions occur and to have the cause remain unknown. Case 1 did not look unlike convulsions I have seen due to other causes. The fact that the child had eaten tablets by mistake three hours before had been forgotten. Such an occurrence could be overlooked and the interval between the swallowing of the tablets and the onset of convulsions would also help to obscure the cause. It would seem that many such cases of fatal poisoning due to strychnine must be overlooked, the deaths being attributed to unknown toxic agents. The deaths from this cause are probably much higher than the figures indicate.

Strychnine poisoning is one of the causes of serious convulsions in small children and should always be excluded in making the diagnosis. Routine chemical examination of the gastric and intestinal contents would lead to the diagnosis in obscure cases.

TABLETS

Strychnine and nux vomica have a wide use in sugar or chocolate coated cathartic and tonic tablets. From $\frac{1}{120}$ to $\frac{1}{60}$ grains (0.0005 to 0.001 Gm.) of strychnine sulphate is found in the formulas of numerous tablets of this kind manufactured for physicians. In time, the general public has become familiar with the trade names of these preparations and purchases them at the drug counter. The formula is printed on the label of the original package, but usually no special warning is given regarding the danger of taking several tablets, nor is there any suggestion that the tablets should be kept from children. The tablets are prepared for adults.

While tonic tablets and other medicines containing fairly large amounts of strychnine have become household remedies, cathartic tablets such as Hinckle's, A. B. & S. and A. B. S. & C. and others have a more general use, owing to the prevalence of general constipation. These sugar-coated tablets and many others containing strychnine are also dispensed without a warning on the drug envelop by physicians. The aggregate amount of strychnine or other poisons thus put in the hands of patients may be surprisingly large. The layman is not aware that the tablets contain large amounts of poison, and if he does notice strychnine in the formula he is unfamiliar with the toxic dosage. The package or bottle is left in reach of the small child. The brightly colored sugar or sweet chocolate coating of the tablets is not unlike candy; in fact, just such appearing candies are sold. They are swallowed without mastication, or otherwise the bitter taste of the various ingredients would serve as a sufficient safeguard. The interval required for the solution and absorption of the tablets makes detection and treatment of the poisoning more difficult. In fact, an attractive and potent poison trap is thus set for the small infant.

TABLE 3.—*Estimated Number of Deaths* from "Other Acute Accidental Poisonings (Gas Excepted)" (International List 177) and from Strychnine Poisoning in United States Death Registration Area*

	Accidental Poisoning (Int. List 177) Estimated		Strychnine Poisoning, Estimated		Deaths from Strychnine Poisoning Actually Reported,
Year	All Ages	5 Years and Under	All Ages	5 Years and Under	All Ages
1926	1,828	444	239	239	178
1927	1,542	473	263	228	179
1928	1,913	506	244	225	189

* Estimated by applying the percentages of the total number of deaths from all causes in New York State, exclusive of New York City, to the total number of deaths from all causes in the United States death registration area.

3. Deaths from Strychnine Poisoning Among Young Children, Statistical Bulletin, Metropolitan Life Insurance Company **11**: 11-12 (Feb.) 1930.

4. Division of Vital Statistics, New York State Department of Health: Personal communication to the author.

VALUE OF STRYCHNINE IN CATHARTIC TABLETS

The tablets most often mentioned as a cause of strychnine poisoning belong to combinations of the shotgun type. They have been so long in use by the medical profession and the public that the reason for the inclusion of some of the ingredients has been quite lost.

In an effort to get the modern view regarding the value of strychnine in cathartic tablets, letters were sent to several leading pharmacologists of this country. Opinion was about equally divided as to its value. A number were of the opinion that it had no value at all and others felt that it had some worth. Fantus [5] states that:

> Nothing may seem more logical than to add to the aloin some strychnine for the purpose of increasing the irritability of the motor neurons on which the aloin is to act; nor might it seem that anything would be more suitable to counteract the reputed tendency of aloes to produce griping than the powerful antispasmodic, belladonna. Unfortunately, by utilizing them in pill form at the same time they cannot possibly act together because of the different speed and duration of action of the three agents. Aloin is slow in action, requiring from ten to twelve hours—that is why it is generally given at bedtime. Strychnine and atropine, on the other hand, are rapidly absorbed and rapidly excreted, having but a brief duration of action. No experienced clinician would expect either of these alkaloids to act for more than four hours. By the time the aloin gets its action in, the alkaloids have long since left the system by excretion into the urine.

Fantus tested pills of aloin with and without belladonna and strychnine on thirty students and was unable to detect any essential difference. However, Yonkman's [6] experiments on dogs show that "there is a real basis for adding strychnine to pills intended to increase peristalsis, e. g., the pill of Aloin, Strychnine and Belladonna N. F."

The amount of strychnine necessary to produce sufficient action on the intestine closely approaches the toxic dose, and other cathartic tablets without strychnine and also without belladonna give very good, if not equally good results.

A more rational treatment of chronic constipation by the regulation of the diet, exercise, establishment of regular habits for bowel movements and other measures would probably give better results.

If strychnine or belladonna, both dangerous poisons, are to be used in the treatment of constipation, they should be given under the direction of a physician and probably in separate tablets or as tablet triturates. The use of strychnine in tonic tablets is more likely to have distinct value, but the added advantage of the "bitter tonic" could also be secured if these tablets were uncoated and therefore bitter. Unpleasant tasting tablets would be less likely to cause poisoning in children.

LAWS REGULATING THE SALE OF STRYCHNINE

The sale of strychnine is controlled by individual state laws rather than by federal statutes. As the United States Department of Agriculture was unable to give a digest of these regulations, it was necessary to write to each state for information. Replies were received from thirty-two states. In nearly all of these states only physicians and pharmacists can sell strychnine and it is required that a record be kept of such sales. The preparations are labeled as to composition and properties and in some states poison labels are required. These laws apply only to strychnine sold in bulk or to preparations containing amounts considered poisonous. Such laws would include strychnine tablets, ⅓ grain (0.02 Gm.), but would not include strychnine in such combinations as aloin, belladonna and strychnine tablets, Hinckle's cascara, Blaud compound and similar preparations.

Such tablets are exempt from restrictions because they are domestic, family or home remedies or under the somewhat vague term of proprietary remedies. Hence the practical application depends on the interpretation of these terms in the law.

The amounts of strychnine in the individual tablet is not considered poisonous. However, these tablets in bottles of 100 tablets may be sold over the counter of the drug store without a physician's prescription. In fact, the only warning is contained in the formula, which must appear on the bottle. This is usually in small type and goes unnoticed by the purchaser.

The laws controlling the sale of strychnine vary greatly in different states. The Department of Public Health of Massachusetts reports [7] that the state "Has no law prohibiting the sale of strychnine for medical purposes, and it has no law requiring proprietaries to be labeled as containing strychnine." Nevada is alone, as far as I can learn, in restricting the sale of the tablets mentioned.

In some states, dealers other than pharmacists may secure a license to sell such tablets. They may even be sold in grocery stores. While one tablet containing 1/60 grain (0.001 Gm.) of strychnine would probably do no harm, the amount of strychnine contained in 100 such tablets would seem altogether too dangerous to be put in the hands of laymen. Considering the loose methods of handling poisons, it is surprising that more deaths do not occur.

PREVENTION

The loss of life from this form of poisoning is about uniform for each year. While it is not extremely high it surpasses in this state the deaths from both tetanus and rabies combined for the same age group. The deaths, mostly in small, active children, could nearly all be prevented. Most of the cases are due to the careless habit of leaving tablets within the reach of small children. Parents should be informed by publicity that such tablets can cause death. The sale and use of such compounds should be under better control.

While the elimination of strychnine from cathartic tablets would probably cause no great hardship, the suggestion that these old and time-honored formulas be abandoned would no doubt meet with active opposition from the medical profession and drug manufacturers. The latter, however, would find that the sale of other cathartic tablets would offset the loss from the combinations mentioned. Manufacturers would no doubt be glad to furnish tablets without strychnine if they were desired by the medical profession.

The formulas are now printed on the unopened bottles of strychnine tablets. The average layman does not read this formula and would be unlikely to suspect that strychnine or belladonna was present in amounts dangerous to children. The requirements of a poison label or other distinct warning would be of value if it covered a low enough range of strychnine per tablet.

5. Fantus, Bernard: Useful Cathartics, Chicago, American Medical Association, 1927, p. 133.
6. Yonkman, F. F.: Effect of Strychnine on the Muscular Activity of the Small Intestine in Unanesthetized Dogs, J. Pharmacol. & Exper. Therap. **37**: 339 (Nov.) 1929.
7. Personal communication to the author.

Such labels may be lost while the bottle remains in the medicine cabinet. This could be prevented by having the poison warning blown in the glass. These measures would not include tablets dispensed by physicians or those obtained on prescription.

The color and flavoring on the tablets are the factors that attract the child. Sugar-coated pills or tablets containing potent drugs are all a menace to small children. If uncoated tablets were used, the bitter taste would discourage the child from eating them. This would be a simple and effective measure. The medicinal value of the tablets would not be reduced and in tonic tablets might even be increased.

Strychnine in sugar coated tablets offers a serious hazard to small children and should be better controlled by pharmacy laws.

SUMMARY

1. Strychnine poisoning is most common in children under 5 years of age, especially those between 1 and 2 years.

2. Strychnine poisoning should be listed under a separate heading in listing causes of death.

3. Strychnine poisoning is most often caused by accidentally eating medicine prepared for adults. Colored sugar coated cathartic tablets, such as Hinckle's cascara and A. B. & S., cause most of the deaths.

4. Strychnine should be considered as a cause of fatal convulsions in infants.

5. Strychnine is not necessary in cathartic tablets.

6. The use and sale of strychnine is poorly controlled by pharmacy laws.

7. If pills and tablets containing strychnine were uncoated the resulting unpleasant taste would prevent serious accidental poisoning in children.

8. Strychnine is the most serious form of accidental drug poisoning in children under 5 years of age.

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THE USES AND LIMITATIONS OF SKIN TESTS IN ALLERGY *

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The syndromes of asthma, hay-fever, urticaria, eczema and similar conditions are no longer considered as separate clinical entities. In the light of the present conception one regards them as different manifestations of the same underlying condition. The basic pathology is the state of hypersensitiveness or allergy; and the symptoms depend on the localization of the allergic reaction. If this takes place in the bronchial tubes it is called asthma or bronchitis; if in the nose, hay-fever or hyperesthetic rhinitis; if in the skin, urticaria or eczema. It is thus apparent that there is a great tendency for this allergy or reactivity to become localized in different portions of the body.

Fortunately, it so happens that in many cases of allergy, no matter where the localized clinical symptoms occur, there is a corresponding reactivity of the skin to the same substance, as shown by the procedure of skin testing. It is hardly to be expected that the skin should be hypersensitive in every case of allergy.[1] Failure to realize this basic principle has led to many disappointments and has caused many to lose entire faith in skin tests and in the concept of allergy in general. The first skin test in the diagnosis of sensitization was performed by Blackley in 1865, using pollen in testing himself. The use of skin tests for other allergic conditions began about twenty years ago. Since that time the procedure of cutaneous testing with proteins to determine sensitization has become increasingly popular until now it has reached a point where nearly every physician is somewhat acquainted with it. As a result of this rapid spread of acquaintance with this procedure as an aid to diagnosis, many physicians and technicians have acquired a set of proteins and have begun to test patients without previous study, training or information concerning the principles involved. It is little wonder, then, that the results have been haphazard and misleading and have caused a great deal of destructive criticism in the field of allergy.

It cannot be denied that sensitization tests serve a useful purpose; neither can it be denied that they have limitations. Maytum,[2] Kern,[3] Alexander[4] and others have expressed similar views. It is my purpose in this paper to point out briefly the uses of these tests, to analyze their limitations, and to suggest possible ways of overcoming these difficulties.

Perhaps the greatest sphere of usefulness of sensitization tests is in the patients with bronchial asthma. In this group at least 50 per cent of the cases can be shown to be sensitive to substances of which most have a clinical significance. In the seasonal hay-fever cases, positive skin tests to the offending pollen may be obtained in nearly all cases; however, the majority of these offending pollens can be foretold without tests by the time of the occurrence of the symptoms and an acquaintance with the hay-fever plants in the patient's vicinity. The group of perennial hyperesthetic rhinitis cases is next in importance from the standpoint of skin testing. Approximately only one third of these can be diagnosed specifically by cutaneous tests. Eczema and urticaria, although in the majority of instances attributable to allergic causes, present great difficulty in locating the incriminating substances by skin testing. Other conditions, such as pruritus, mucous colitis, bladder disturbances, purpura, migraine and certain arthropathies, have from time to time been placed in the class of sensitization phenomena; however, in the majority of such instances the skin tests have been negative and have been of little aid.

LIMITATIONS AND DIFFICULTIES OF SKIN TESTS

The difficulties encountered in sensitization tests are attributable to many causes, which may be grouped under a few heads:

1. Skin tests may be negative to substances to which the patient is clinically sensitive.

This is perhaps the most common obstacle in diagnosis and is based on a variety of causes. The first essential in allergy work is to assure oneself that one is using active and potent materials for the tests. It is of paramount importance to know that the materials are capable of eliciting positive responses in the skin. This necessitates repeated trials of materials on patients in whom the causes of sensitization have been previously established.

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* Read before the Section on Pathology and Physiology at the Eighty-First Annual Session of the American Medical Association, Detroit, June 27, 1930.

1. Alexander, H. L.: Localized Allergy, M. Clin. North America 11: 399 (Sept.) 1927.

2. Maytum, C. K.: Value of Skin Tests in Asthma, Proc. Staff Meet. Mayo Clinic 4: 66 (Feb. 27) 1929.

3. Kern, R. A.: Interpretation of Skin Tests in Diagnosis of Bronchial Asthma, Atlantic M. J. 30: 290 (Feb.) 1927.

4. Alexander, H. L.: Overemphasis on Skin Tests in Allergy, Tristate M. J. 1: 85 (Feb.) 1929.

In many patients there will be found refractive or negative phases in skin sensitiveness. In the same individuals, repetition of the tests at other times may give definitely positive reactions.

An inherent lack of reactivity of the skin accounts for many negative reactions. This may be due to trophic changes caused by age and other degenerations but is more commonly due to an entire lack of localization of allergy in the skin although other parts of the body may be capable of allergic response.

Another common cause for such negative reactions is undoubtedly the fact that the protein extracts used for skin testing may be entirely different chemically from the proteins with which the sensitized organ comes in contact. For example, the powdered extract of strawberry protein used for making skin tests is probably not the same as the digested, absorbed and circulating strawberry allergen causing the urticaria. This fault is probably especially frequent in the case of foods.

In young and unruly children and in cases in which the skin is practically covered with eczematous lesions, cutaneous tests may be practically impossible.

2. Skin tests may be positive to substances to which the patient is clinically negative.

Here again the test materials may be at fault. Frequently some extracts contain materials capable of producing nonspecific reactions. This is particularly apt to occur in the case of fish proteins. Such extracts will give reactions in almost every one who is tested. Occasionally the patient's skin is so sensitive to slight mechanical or chemical irritation that positive reactions will occur with all tests.

Although a positive skin test may represent a true sensitization phenomenon it does not necessarily signify that the substance is the actual cause of the symptoms in question. Frequently the patient has more than one allergic manifestation: his chief complaint may be bronchial asthma, but a further inquiry may elicit a history of urticaria and gastro-intestinal disturbances. It would be difficult, indeed, to ascertain under such circumstances whether a certain food showing positive reactions is the cause of the asthma or the other less important allergic symptoms.

Frequently numerous positive reactions are obtained in an individual, but perhaps only one or two are the actual cause of the clinical symptoms. Sensitization to the other substances is present but the degree of clinical exposure may not be sufficient to produce symptoms. This phenomenon may also occur in individuals who apparently present no allergic symptoms of any kind. Such reactions are to be looked on as potential causes of clinical allergy: they may at any time arouse clinical manifestations provided the allergic balance of the individual is disturbed, either by immunologic changes or by excessive contact with the sensitizing substance.

3. Negative skin tests frequently indicate an absence of allergy.

It is perfectly possible that some of the conditions that are now considered allergic, such as bronchial asthma and urticaria, may in some instances be caused by pathologic changes other than sensitization. Such cases would, of course, be evidenced by negative skin tests. The importance of the recognition of this principle is based on the experience that many of these instances can be successfully treated by means other than allergic.

In addition to this difficulty there may be a question of diagnostic error. For example, the symptoms of bronchial asthma may be simulated to some degree by fibroid phthisis, aortic disease, cardiac asthma and other cardiac dyspneas, a foreign body in the bronchi and pneumothorax. Naturally, sensitization tests would be of no avail in such instances.

4. Many variations exist in the relation of the skin tests to the clinical condition.

The intensity of skin reactions does not indicate the intensity or likelihood of the presence of clinical symptoms. Strong reactions may be no more significant than weak reactions. A weak or borderline reaction may be extremely significant. Vaughan [5] analyzed the diagnostic and therapeutic results of two series of cases, one with strongly positive reactions and the other with borderline reactions. He found the results in the treatment of the latter based on the diagnosis by the skin tests practically as good as in the former group.

At times, positive reactions are delayed for two or three hours or even twenty-four hours. Such reactions as a rule have a different appearance than the immediate reactions, but they are nevertheless of clinical importance. This delayed reactivity is more apt to occur with food tests than with any other kind of tests.

Multiple reactions are common. It is important to realize that many of these multiple reactions are merely due to group reactors. For example, an individual sensitive to the timothy pollen will usually react also to the pollens of other grasses. In addition to these group reactions there may also occur sensitization to unrelated substances, of course.

The reactions to the allergens may be of secondary or no importance. Other factors of a nonspecific nature, as pointed out by Vaughan,[6] may be of more direct significance. Although clinical sensitization may exist, other complications such as infection, mechanical difficulties and neurogenic factors may be of still greater importance. To illustrate, bronchial asthma originally due to feather sensitivity may be complicated by bronchial infection. The source of sensitization may have been subsequently removed or have been obviated by an increased tolerance of the individual. However, the complicating bacterial infection may prolong the asthmatic symptoms. It is necessary to study the disease and the patient as a whole and not merely focus one's attention on the skin tests.

To correlate the results of skin tests with the cause of the allergic symptoms, considerable technical information is necessary. A positive skin test is a clue that should stimulate a search to locate the article it represents. For this purpose it is essential to have a detailed knowledge of the composition of household articles, foods and other materials.

HOW DIFFICULTIES ARE TO BE MET

The limitations enumerated in the process of cutaneous testing may be combated in a number of ways, depending somewhat on the particular difficulty in question. The procedures to be considered in such instances may be classified as follows:

1. *Other Methods of Tests.*—When cutaneous tests have repeatedly failed to produce positive reactions, it is still possible to elicit them by other means. The most common of these is the intracutaneous injection of liquid extracts.—While such a procedure is in my opinion unsafe for routine use, it is quite safe if tests are done only with materials that have previously given a nega-

5. Vaughan, W. T.: Interpretation of Borderline Allergic Reactions, J. Lab. & Clin. Med. **14**: 433 (Feb.) 1929.

6. Vaughan, W. T.: Rôle of Specific and Nonspecific Factors in Allergy and Allergic Equilibrium, J. Lab. & Clin. Med. **13**: 633 (April) 1928.

tive cutaneous test. This method with fair frequency will give positive reactions of clinical significance when the cutaneous method has failed. It must not be forgotten, however, that the intracutaneous method, as shown by Peshkin [7] and others, is productive also of frequent false positive reactions and must therefore be interpreted with extreme caution.

Quite frequently the skin will show no reactivity but the mucous membranes, especially of the conjunctiva and nose, will be quite sensitive. In such cases the conjunctival or intranasal tests are available. These tests are particularly applicable to atypical pollen cases. A solution of the pollen or a speck of dry pollen is placed in the conjunctival sac or in the nose. The allergic reaction manifests itself in the eye by marked vascular injection, swelling of the mucosa, lacrimation and itching. In the nose, rhinitis, sneezing, injection and swelling of mucous membrane with nasal obstruction constitute a positive reaction. This test may also be used with some of the other allergens.

In some cases in which the allergic manifestations are localized in the bronchi the skin, conjunctivae and nasal mucosae may be entirely nonreactive. In such instances it may be possible to elicit positive response by blowing some of the material into the patient's respiratory tract or allowing him to inhale the emanation in question. A positive reaction will consist either of a definite spasmodic cough or of an attack of bronchial asthma. This method is practical only with the inhalant materials.

Ingestion of natural foods as a means of testing will be described more fully under another heading. It has been shown by Kahn [8] and others that occasionally a subcutaneous injection of the test protein will produce a positive response when the cutaneous and intracutaneous routes have failed. Another method that has been discussed in recent years is the procedure of passive transfer. This is based on the principle that the intradermal injection of a small amount of serum from an allergic individual into a normal skin sensitizes the latter to whatever substances the former was sensitive. Although this method of indirect skin testing is not practical in many cases, it nevertheless may offer a solution in those instances in which direct testing is impossible.

2. *Clinical Corroboration and Therapeutic Trials.*—It is hardly possible to overemphasize the fact that sensitization tests are merely laboratory guides that point the way for further investigation. Clinical corroboration is the final test. To be of value, positive skin tests must correspond with the clinical facts, such as time of the appearance of symptoms and exposure to allergens. In all cases in which the laboratory tests are positive, their relation to the clinical symptoms must be proved by trial. This means, for example, to have the patient stay for a short time around horses in the case of positive skin tests to horse dander, or to eat a certain article of food in the case of a positive reaction to that food. A prompt response with the production of clinical symptoms corroborates the diagnosis of the etiology.

The foregoing procedure presupposes that the patient has intervals of freedom from symptoms. In those instances in which the symptoms are constant and also in the cases in which multiple positive tests are obtained, it is necessary first to attempt to free the patient from his clinical manifestations before exposure experiments are tried. All the materials represented by the positive skin tests are eliminated at once and then exposure, by inhalation or ingestion, is tried with one thing at a time. Thus it is usually found that only a portion of the positive tests are clinically significant.

In the event that sensitization tests are all negative or that the management based on the positive tests has not yielded expected results, it is still possible that the individual is clinically sensitive to the substances that have given negative tests. It is particularly in such instances that the methods of systematic elimination and addition should be tried. In general, two methods are available: systematic elimination of one or more articles at a time from the diet or home environment, or the complete elimination of all substances likely to cause sensitization and then the gradual addition of one or two of these articles at a time. In the case of foods, this means the elimination primarily of such foods as are the most common causes of sensitization, such as egg, wheat, milk, peas, beans and chocolate. In the case of inhalant sensitization it means the removal from the patient's environment of such things as dogs, cats, horses, feathers, hair in furniture or other articles, cotton dust and other sources of dust.

3. *Investigation of Other Factors Than Allergy.*—The most experienced of the allergists are ready to admit that other factors than allergy may play a part in the causation of symptoms ordinarily attributed to sensitization. In addition to that, diagnostic errors are possible because of the similarity in symptomatology of allergic disease and other conditions. It is only by a thorough investigation of the patient that these conditions can be discovered. This should include a detailed history with especial attention to certain differential points; a complete physical examination especially to exclude complications of the allergic disease or to diagnose conditions that may be mistaken for it; laboratory examination, particularly a Wassermann test, eosinophil count of the blood, sputum examination and urinalysis. In respiratory cases it should include also a roentgenogram of the chest and nasal sinuses. Occasionally, chemical examination of the blood or the determination of the basal metabolic rate may be of value. Above all, there should be a willingness on the part of the clinician to consider other possible causes than allergy for the particular symptoms.

It is evident, then, that a complete, comprehensive clinical experience with the allergic diseases and conditions resembling them is required to enable one to judge, interpret and follow up skin tests for allergy. For this purpose such an individual should be one who is skilled in the diagnosis of medical diseases and who has subsequently obtained experience in the diagnosis and management of allergic conditions. A technician cannot be relegated to the making of skin tests and reporting them to the referring physician with the necessary advice. With the availability of considerable periodic literature on allergy and the increasing number of allergy clinics, it is possible for practically every physician to gain first-hand knowledge about the allergic diseases and their investigation by sensitization tests.

SUMMARY

In recent years the use of protein skin tests in the etiologic diagnosis of allergic disease has become increasingly popular. Because of the inherent difficulties and limitations of these tests, much disappointment

7. Peshkin, M. M., and Fineman, A. H.: Asthma in Children; Comparative Study of Scratch and Intradermal Methods of Skin Testing, Am. J. Dis. Child. **34**: 815 (Nov.) 1927.

8. Kahn, I. S., and Grothaus, E. M.: Incidence and Significance of Negative Skin Tests in Pollen Asthma, J. Lab. & Clin. Med. **13**: 949 (July) 1928.

and criticism have resulted. Sensitization tests should be considered only as laboratory guides. There are many limitations to the value of skin tests in allergy. Negative skin tests do not necessarily mean an absence of sensitization to these substances. Positive tests do not necessarily indicate the cause of the clinical symptoms. Complicating factors may be more important than the allergy. The difficulties may be met chiefly by employing, when necessary, other methods of testing, such as intracutaneous, subcutaneous, conjunctival, nasal and passive transfer; by clinical trials and elimination diets; by a broad knowledge of the clinical correlation and clinical experience in allergy; and by a willingness on the part of the clinician to consider other causes than allergy.

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ABSTRACT OF DISCUSSION

DR. EDWARD MANSUR, Jefferson City, Mo.: I should like to ask whether, in the case of feather asthma, especially canary feather, the likelihood would be equally positive for sparrow feathers, the two birds being quite similar in many characteristics. I should also like to ask whether there is any feather allergy desensitization treatment available that is worth while and whether the ketogenic diet has been tried and is of any value, particularly in the treatment of allergic asthma.

DR. S. M. FEINBERG, Chicago: On the question of the relation of canary feathers and sparrow feathers, I must admit that I haven't paid any attention to sparrows, although I have had experience with canary feather sensitization. It is very rarely the case that a single canary will cause trouble in a patient who has a canary in his home. It is a matter of exposure to a much more massive dose. For instance, in the clinic I have a patient who is sensitive to canary feathers, who has asthma and who is exposed to approximately seventy-odd canaries by reason of the fact that his brother, with whom he lives, breeds the canaries. I haven't investigated or thought about investigating the question of sparrow feathers. I imagine, judging from experience with other related feathers or foods, that there would be a relationship, as shown by skin tests and probably as shown by clinical symptoms. I rarely use the feather treatment. It is much more simple to eliminate feathers in the home, to substitute other materials for pillows and covers, or merely to enclose the pillows in an impermeable, dustproof, rubberized sheeting. Occasionally, I have treated feather cases, but the results are not as successful as one is led to believe from the literature. As to the ketogenic diet, I have not experimented with that. I know of some experiments that are going on in New York on that. Apparently from what I hear some results are being obtained in bronchial asthma. Of course, a ketogenic diet means a marked reduction in certain starches. I know that many patients who have asthma and other sensitizations are sensitive to certain foods, particularly the cereals, and it seems to me not at all impossible that some of the results with the ketogenic diets are due to elimination of certain foods.

DR. A. H. SANFORD, Rochester, Minn.: I have seen a close relationship between chicken feathers and goose feathers in testing, and in the practical application I think that the patient often does not know whether he is using goose or chicken feather pillows. One patient, particularly, was sensitive to chicken feathers, to the protein of chicken meat and egg albumin, and yet the only thing he really actually was sensitive to was the chicken feathers. Unfortunately, he was in the poultry business and could not handle the chickens very well.

DR. EDWARD MANSUR, Jefferson City, Mo.: I have a patient with feather asthma. I tested with all the feather dust tests I could lay hands on but none were sparrow feathers. The patient reacted far more markedly to the canary feather allergy than any other. I asked her if she had canaries at home. She said she did not. I said, "How about sparrows or any other kinds of birds?" She said, "I did notice this spring when the boys cleared out my back porch and got rid of the sparrows' nest I got better." The sparrows built a nest in the porch. When that was eliminated, she noticed considerable improvement.

Clinical Notes, Suggestions and New Instruments

THE TREATMENT OF PANCREATIC FISTULA FOLLOWING RUPTURE OF PANCREAS: REPORT OF A CASE

WILLIAM K. FAST, M.D., ATCHISON, KAN.

The statement is made by Stern [1] that traumatic pancreatitis, in which the pancreas is the only organ originally injured, is an exceedingly rare condition. The full and comprehensive review of the literature, as given by that author, is ample support to that statement. Whenever pancreatic fistula has developed following injury, the management of these cases has been perplexing and the mortality always high.

The management of one of these rare and interesting cases, wherein the pancreas was the only organ injured and in which healing was complete three weeks after the appearance of the fistula, is herewith described. The treatment used in this case was first suggested by Potter [2] for duodenal fistula. I have been unable to find that this treatment has been used in the treatment of pancreatic fistula, prior to its use in the case reported here. Potter [3] states that he has no knowledge of the treatment being applied to a definite pancreatic fistula before. The fact that the destruction of tissue from a duodenal fistula is, per se, due to the pancreatic juice makes the treatment the same.

REPORT OF CASE

L. H., a woman, aged 20, a waitress, was admitted to the Atchison Hospital at 7 p. m., March 15, 1930, thirty minutes after being injured in an automobile collision. She was first examined by Dr. Charles W. Robinson, who found that she was unconscious and bleeding profusely from a 6 inch scalp wound. She soon reacted satisfactorily, a roentgenogram of the head was negative for fracture, and the scalp wound was then sutured. She complained of general aching and soreness and a feeling of uneasiness in the epigastrium.

Nausea and vomiting developed forty-eight hours after admission, together with extreme constipation, which was accompanied by gradual abdominal distention. There was no blood in the vomitus and none in the stool secured on the second day. After gastric lavage the nausea and vomiting subsided. Small doses of morphine were then given but nothing by mouth. On the eighth day a large bowel movement resulted from an enema, after which the distention disappeared and the patient felt much better. The pulse and temperature were normal at this time.

With relief of the distention there appeared in the left hypochondriac region an elongated swelling which bulged forward beneath the left rectus muscle and extended from the left costal margin to below the umbilicus and was moderately tender on palpation. Fluctuation was present.

Complete urinalyses at this and previous examinations were normal. The blood count was: red blood cells, 3,000,000; hemoglobin, 75 per cent; white blood cells, 8,000; polymorphonuclears, 73 per cent.

At the request of Dr. Robinson, who had made a diagnosis of localized hematoma, in which I concurred, an exploratory celiotomy was done. Following a preliminary injection of one-fourth grain (0.016 Gm.) of morphine sulphate, the skin and subcutaneous tissues were infiltrated with 0.5 per cent procaine-epinephrine solution. The abdomen was opened through a high incision in the left side of the rectus. There was no free fluid in the general peritoneal cavity and the intestines were collapsed and empty. A tag of omentum was adherent to a low right rectus scar, the site of a previous appendectomy. This was divided.

There was a tense, bluish mass completely filling the lesser peritoneal cavity. This tumor had the appearance of a hemorrhagic mass, part of which may have been due to hemorrhage

1. Stern, E. L.: Traumatic Injuries to the Pancreas, Am. J. Surg. 8: 58-74 (Jan.) 1930.
2. Potter, Caryl: The Treatment of Duodenal Fistula, J. A. M. A. 88: 899-901 (March 19) 1927.
3. Potter, Caryl: Personal communication to the author.

but resembled the grumous fluid so often seen in the lesser peritoneal cavity accompanying hemorrhagic pancreatitis. After the general peritoneal cavity had been isolated by packing, an opening was made in the gastrocolic omentum. This released 2.5 liters of thin, dark, bloody fluid which was odorless and contained flakes of fibrin and many strings of necrotic fat. With the absence of a bleeding or injured vessel on the posterior stomach wall and the release of thin, blood-tinged pancreatic fluid containing strings of necrotic fat, the diagnosis of rupture of the pancreas was certain.

Deeply situated and opposite the first lumbar vertebra there was a small necrotic mass of fibrous and fatty tissue which on removal was followed by the discharge of 2 drachms (8 cc.) of clear fluid. The prevertebral portion of the pancreas had been crushed against the anterior surface of the body of the vertebra, producing a V-shaped defect in the upper edge. Because of the extreme friability of the pancreatic tissues, suturing was abandoned after one attempt.

A one-half inch rubber tube was placed in the defect and another of like size placed as low as possible in the lesser peritoneal space. Both were brought out through the opening in the gastrocolic omentum, which was then closed tightly with interrupted sutures of catgut. Both tubes were fastened in the lower end of the incision, which was then closed in the usual manner.

The patient felt better immediately, and during the first forty-eight hours drainage was profuse and blood-tinged. After forty-eight hours it lessened, a change of dressings being necessary only four times each twenty-four hours. On the fourth day it was clear and watery, and at this time the first evidence of skin irritation appeared. On the fifth day the lower tube was removed. The clear fluid discharging from the remaining tube was alkaline in reaction and the amount in twenty-four hours was 4 ounces (120 cc.). The wound and surrounding area were kept thickly covered with zinc oxide paste and the remaining tube was removed on the tenth day. The patient had been placed on a high fat, antidiabetic diet which showed no influence on the amount of secretion being discharged. I then found that a high carbohydrate diet in the form of Karo syrup given in 2 ounce (60 cc.) doses every four hours would reduce the amount of secretion to 2 ounces in each twenty-four hours, but this did not lessen the digestion of the wound, which was pronounced within forty-eight hours after the removal of the upper tube. A raw, crater-like area surrounded the tube site and in twelve hours increased three-fourths inch in diameter.

I decided to try the treatment suggested by Potter [4] as being of value in duodenal fistula, together with the modification suggested by Warshaw and Hoffman.[5] A number 12 french catheter was inserted as far as possible into the fistula and the wound packed with gauze saturated with a 10 per cent aqueous solution of Witte's peptone. Tenth normal hydrochloric acid was instilled into the catheter at the rate of twenty drops an hour. The high carbohydrate diet was maintained.

Twenty-four hours after the institution of this treatment, digestion of the wound ceased, the crater began to fill in, and it was entirely closed fourteen days later. The catheter in the meanwhile was shortened 1 inch a day, after the tenth day. From the fourteenth to the twenty-first day the granulating wound was kept covered with beef extract paste.

Thirty days after operation the patient was discharged from the hospital with the incision entirely healed. Though the patient had been on a high carbohydrate diet and at the same time losing much of her pancreatic secretion, I was unable at any time to find sugar in the urine. On the day on which she was discharged her weight was 11 pounds (5 Kg.) under her weight on admission.

A recent report from the patient states that she is well, has regained her normal weight, and is attending to her usual duties.

Western Union Building.

4. Potter, Caryl: The Treatment of Duodenal and Fecal Fistula, J. A. M. A. **92**: 359-363 (Feb. 2) 1929.
5. Warshaw, David; and Hoffman, W. J.: High Intestinal Fistula, J. A. M. A. **94**: 1050-1052 (April 5) 1930.

FIXATION AND SUPPORT OF THE HEAD IN FRACTURES OF THE CERVICAL VERTEBRAE

LOUIS LE FEVRE, M.D., AND SAMUEL JACKSON, M.D.
MUSKEGON, MICH.

Our method of fixation of the fragments and support of the head in fractures of the cervical vertebrae is submitted to the profession for trial and criticism, in the belief that it will, in the hands of others, as it has in our hands, prove more satisfactory to both the surgeon and the patient than existing methods in common use.

The device consists of two pieces of wrought iron bent into ovals, the one to fit the body curve around the neck under the chin, the other to fit around the neck and over the shoulders, the latter oval being slightly larger than the former. The two ovals of iron are placed with their long axes at right angles to each other and are held together by screws on which turnbuckles are placed, which permits of raising or lowering the upper oval laterally, anteriorly or posteriorly. The two ovals are broken in front and behind and hinged at one of these places so as to permit of opening and closing them around the neck.

Fig. 1.—Front view of apparatus for fixation and support of the head in fractures of the cervical vertebrae.

The two iron ovals are padded heavily with felt and covered with clean gauze. The device is then ready to be placed about the neck of the patient, which is done by opening it on the hinge mentioned, and closing it when it encircles the neck. When properly in position, the lower oval rests on the shoulder girdle and conforms to the contour of the shoulders, and there is a space of about an inch all around between it and the base of the neck. The upper oval fits snugly, but not uncomfortably, just under the chin and under the occiput. Traction can then be exerted on the head by screwing the turnbuckles so as to raise the upper oval and the head with it, the weight being transmitted to the shoulder girdle through the turnbuckles and the lower oval. One or more turnbuckles can be turned more than the others, and in each case that we have treated we have found that anesthesia and numbness in the extremities due to pressure on the nerve roots rapidly disappear as the apparatus is adjusted. We have used the disappearance of pressure symptoms as a guide to the amount of screwing of the turnbuckles.

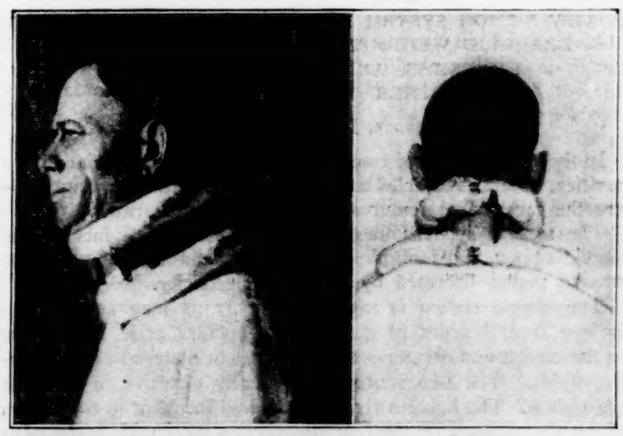

Fig. 2.—The illustration on the right shows the splint in place and the joint which is opened to admit it around the neck. On the left note the snug fit under the chin and occiput, obtained by twisting the turnbuckles between the two rings.

The advantages of this apparatus that we have noted are these:

1. Traction on the head, or the equivalent of it, the head being raised off the broken fragments of the cervical vertebrae as the screws are turned, can be closely and accurately adjusted

and can be maintained in an ambulatory patient. This permits of a much shorter period of hospitalization.

2. It is more comfortable to the patient than either a plaster cast or a halter.

In each of the four cases we have treated with this device, the numbness, anesthesia and paralysis in the extremities have been rapidly relieved, a large part of it spontaneously with the application of the apparatus. Bearing in mind that concellated bone heals much more slowly than compact bone, we have left the fixation apparatus in position in each case at least eight weeks, but during the last four weeks all patients were ambulatory, and two patients during the last two weeks resumed their regular occupations of janitor and fireman, respectively.

While the nerve filaments in the spinal cord that are destroyed or severed will never regenerate, the use of the fixation apparatus in the four cases we have had under our care has suggested to us that a surprisingly large amount of symptoms, such as anesthesia, paralysis, numbness and tingling, are due to pressure and edema, which might easily become permanent if unrelieved, but which can quickly be relieved by proper traction on the head.

Credit should be given for the mechanical construction of this apparatus to Mr. Fitzgerald, one of the patients, who suffered a fracture of the body of the fourth cervical vertebra in an automobile accident, and who was moved to exert his ability by the discomfort of lying flat on his back with traction on the head exerted through a leather halter under the chin and occiput. In recognition of this, we are inclined to christen this device the Fitzgerald collar.

An effort was made to make the lower rim of the collar conform more closely to the contour of the chest wall by using a piece of flat sheet metal hammered so as to fit. This was discarded, however, as it was never as comfortable as the more clumsy appearing ring.

Although we have used this only for fractures, it suggests itself for any condition in which it is desired to remove the weight of the head from the cervical vertebrae, as in caries of the spine from tuberculosis.

287 West Western Avenue—279 West Western Avenue.

A NEW SIPHON SYSTEM FOR MAINTAINING CONTINUOUS DRAINAGE WITHOUT AIR BLOCK IN THORACIC EMPYEMAS AND IN INFECTIONS OF OTHER BODY CAVITIES

F. M. POTTENGER, JR., M.D., MONROVIA, CALIF.

In the maintenance of continuous aspiration from various body cavities, several obstacles are encountered. Chief among these are the mechanical features of the suction apparatus.

The several systems in use at the present time include the simple siphon, the multiple bottle siphon and various elaborate suction pumps operated by water or electricity.

The simple siphon is satisfactory only as long as the tube is free from bubbles of gas. These bubbles arise from leaks in the circuit and decomposition of purulent material and irrigating fluids. The two sources are equally effective in blocking the siphon. The bubbles rising to the highest point in the siphon break the column of fluid in the suction side with consequent loss of negative pressure. The negative pressure exerted by a siphon is equal to the height of the column on the suction side less the height of the column on the intake side.

The multiple bottle systems require great care to avoid leaks which minimize the additional suction gained by their use. Though correct in theory, their use in hospital wards has not proved satisfactory because of the constant attention required. An air leak is as effective in ruining their efficiency as is a collection of bubbles in the simple siphon.

Pumps, on the other hand, are costly to purchase, are costly to maintain and require continuous attention.

The apparatus illustrated in figure 1 is a modification of a simple siphon, so designed that all gas and air bubbles are eliminated from the circuit. *D* and *A*, standard one-liter Pyrex flasks, are placed in slots at each end of a double arm standard. *D* is filled with the irrigating solution and *A* with sterile water. *R* is a large receiver which at all times must have sufficient fluid in it to cover the end of the suction hose which connects *A* with *R*. *C* and *S* are the special rubber connections which have been described in another article.[1] To *C* the irrigating hose is connected, which may enter the cavity either

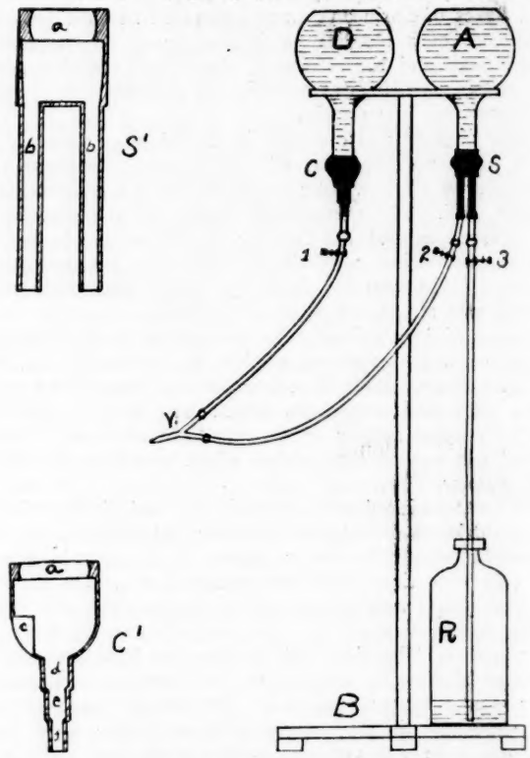

Fig. 1.—Apparatus used for chest drainage in the chest surgery service, Los Angeles County General Hospital, and cross-sections of special rubber connectors. *A*, air reservoir; *B*, two-armed standard for holding flasks; *C*, one-legged connector with valve in side wall; *C'*, same in cross-section; *a*, suction ring; *c*, valve; *d*, 3/8 inch outlet; *e*, 1/4 inch outlet; *f*, 1/8 inch outlet; *D*, reservoir for irrigating solution; *R*, pus receiver; *S*, special two-legged rubber connector; *S'*, cross-section of same; *a*, suction ring; *b*, *b*, two legs; *Y*, Y-tube used to connect chest with irrigating and aspiration circuits; 1, clamp on irrigating tube of same number; 2, clamp on aspiration tube of same number; 3, clamp on suction tube of same number.

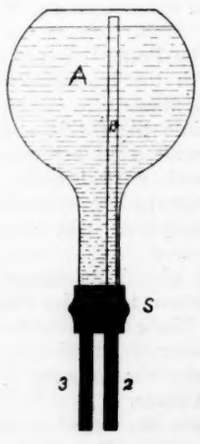

Fig. 2.—Air reservoir connected so as to prevent back flow: *A*, air receiver flask filled with water; *B*, glass tube secured into leg 2 of rubber connector and extending above the surface of fluid in *A*; *S*, special rubber connector; 2, aspirating circuit connection; 3, connector with tube to pus receiver.

separately or through a Y-tube connected with the aspiration tube 2 as shown. Tube 2 is then connected to one leg of *S* and the suction hose 3 is connected to the other leg. Each hose has its corresponding clamp.

This circuit operates as follows:

D, with its connection to tube 1, is a reservoir for irrigating fluid which can be used as needed. Tube 2 is the aspirating tube which removes the pus from the cavity. Tube 3 drops straight to the receiver *R*. *S*, acting as a gas separator, completes the circuit between 2 and 3 while *A* acts as a gas receiver. Any gas that may enter tube 2 has little effect on the circuit for it is removed at *S* as soon as it reaches that point, rising to the surface and displacing an equal volume of liquid. Any gas that develops in tube 3 rises to the surface of *A*, likewise displacing an equal quantity of water. In this manner a definite suction is assured at all times.

To obtain the best operating results, tube 3 should be of about three-eighths inch in diameter and of stiff noncollapsing rubber.

This circuit is so effective that, even if

1. Pottenger, F. M., Jr.: Rubber Flask Connectors for Hypodermoclysis, Intravenous Therapy and Other Uses, J. A. M. A. **95**: 1503 (Nov. 15) 1930.

hose 2 is wide open, aspiration will continue as long as there is fluid in *A*. In order to study the hydrostatics of the drainage operation carefully, a manometer may be inserted at *Y*, and then one may care for one's patients more intelligently.

This apparatus, because of its simplicity of construction and manipulation, can be used for many purposes when suction is required. If 2 is extended by a glass tube (fig. 2), the efficiency is in no way impaired and the clinician can be certain that no fluid will flow back down tube 2 from the receiver, should any accident occur. With this addition it has been used at the Los Angeles County General Hospital to aspirate pus from peritonitis cases and postoperative secretions from throats.

Because of the ease with which *A* can be refilled, it is easy for a nurse to change the flask as it becomes empty. In closed aspiration circuits, such as those used in treating empyema of the thorax, aspiration can be maintained for a period of from several days to more than a week without changing the fluid in *A*.

The rubber devices, because of their simplicity of construction, durability and ease of use, add materially to the success of this method.

This apparatus has been developed and adopted in the Chest Surgery Service of the Los Angeles County General Hospital.

STAB WOUND OF THE NECK FOLLOWED BY CEREBROSPINAL FLUID LEAKAGE AND NO SPINAL CORD INJURY

H. K. SHAWAN, M.D., DETROIT

It is unusual for stab wounds of the neck to puncture the dura —thus causing cerebrospinal fluid leakage—without damage to the spinal cord. The patient whose history is given was seen at the Receiving Hospital, Detroit.

REPORT OF CASE

History.—T. H., a white man, American, aged 30, was admitted to the hospital, June 13, 1930, having been stabbed in the left side of the neck. He thought that a portion of the blade still remained in the wound. He stated that it was difficult for him to rotate his head without pain. At no time had he complained of numbness and tingling or sharp shooting pains in the upper extremities. His bladder and bowel control was unaltered. He could walk and had no motor dysfunction in either of the upper or lower extremities.

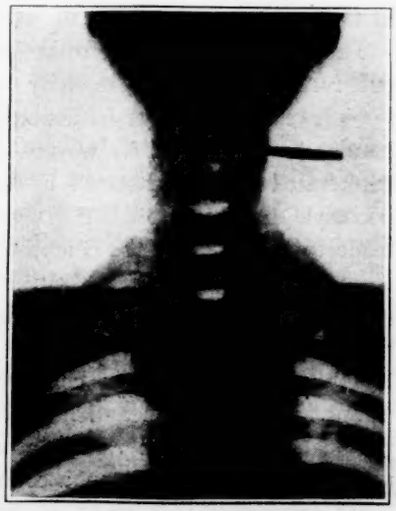

Fig. 1.—Anteroposterior view of the neck. The opaque shadow represents the knife blade, which is found piercing the vertebral column between the fifth and sixth cervical vertebral arches.

Physical Examination.—The patient was robust, fully conscious and well oriented. His speech was normal. His gait was unimpaired. There were no signs of spinal or cerebellar ataxia. The pupils were round and equal and reacted to light and in accommodation. Extraocular movements were normal. The fundi were normal. There were no signs of cranial nerve palsies. The reflexes were normal throughout. There were no pathologic changes in sensation.

The neck was held rigid and slightly tilted to the left. He could move it in all directions, but with difficulty. A thin, blunt, hard object was felt under the skin in the middle third of the left side of the neck. The stab wound was 1 cm. in length. At examination it was noted that the dressings at the site of the lesion were wet and on watching the wound in the neck, a flow of cerebrospinal fluid was noted. This flow was not continuous but fluid trickled out every four or five minutes.

Roentgenograms of the neck showed a horizontal, long, opaque, metallic shadow, the tip of which had pierced the space between the fifth and the sixth vertebral pedicles on the left side (figs. 1 and 2).

Operation.—Under local anesthesia, a short skin-plane incision was made over the base of the retained foreign body, parallel to and just above the stab wound. It was an easy matter to remove the blade through this operative field. The broken off knife blade measured 5.5 by 1 cm. The skin incision was closed without drainage.

Fig. 2.—Lateral view of the neck with the knife blade in close proximity to the interpedicular space. It is suggested that the dura-arachnoid is pierced at this situation.

Postoperative Course.—His convalescence was uneventful. The cerebrospinal fluid leakage stopped immediately. There was no fever and the blood counts were normal. The patient was discharged in three days. Examination four months later showed complete recovery.

COMMENT

In the majority of stab wounds of the dura-arachnoid the spinal cord symptoms and signs are outstanding. The cord may be partially severed, it may become edematous because of injury, or some of the spinal arteries may be sectioned, with consequent subarachnoid hemorrhage.[1]

It is unusual to have cerebrospinal leakage without symptoms of spinal cord damage. The earliest case is probably the one described in 1743 by Cuvillier.[2] His patient walked 80 miles after a stab wound in the back. Soon a tumescence appeared which on incision showed serosanguineous fluid, presumably a mixture of blood and spinal fluid. The possibility of infection with cerebrospinal fluid leakage after stab wounds of the spinal canal is imminent. Such a case was recently reported by Mavrodin and Tzovaru.[3]

In the case reported here there was a stab wound puncturing the spinal membranes. For several days there was a leakage of cerebrospinal fluid. No early or late spinal cord interference occurred. No meningitis developed. There was a complete recovery after the extraction of the knife blade.

David Whitney Building.

1. Chipault, A.: Etudes de chirurgie medullaire, Paris, 1893. Frazier, C. H.: Surgery of the Spine and Spinal Cord, New York, D. Appleton & Co., 1918; Rand, C. W., and Patterson, G. H.: Stab Wounds of the Spinal Cord, Surg. Gynec. Obst. **48**: 652-661 (May) 1929.
2. Cuvillier, quoted by Chipault (footnote 1).
3. Mavrodin, D., and Tzovaru, S.: Case of Wound on the Side of the Neck with Isolated Lesions of the Spinal Meninges, Spinal Fistula with Subsequent Meningitis, Spitalul **48**: 17-20 (Jan.) 1928.

The Peculiar Distinction of Hippocrates.—To Hippocrates belongs the peculiar distinction that he was the first definitely to discard the idea that disease was due to the gods or other fantastic imaginings; he dissociated medicine for the first time from religion and philosophy. This alone would have been sufficient to insure his immortality, but he went further, and by crystallizing the loose knowledge of his predecessors and contemporaries into systematic science, he became the master to whom modern medicine owes the art of clinical inspection and observation. So keen were Hippocrates' power of observation, and so clear are the written descriptions ascribed to him of such diseases as tuberculosis, puerperal (childbirth) convulsions, and epilepsy that, with a few changes and additions, they might be incorporated entire in any modern textbook of medicine.—Oliver, W. W.: Stalkers of Pestilence, New York, Paul B. Hoeber, Inc., 1930.

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SATURDAY, NOVEMBER 29, 1930

THE ETIOLOGY OF GINGER PARALYSIS

Within the past year a peculiar form of paralysis has afflicted many persons, particularly throughout some of the Midwestern or Southwestern states. Government experts have asserted confidently that the numbers of the patients run into the thousands, thus exhibiting what may reasonably be termed epidemic proportions. Evidence has rapidly accumulated indicating that the unique malady is closely associated with the drinking of fluidextract of ginger. The latter has been sold extensively for many years, since the introduction of the Volstead Act, for beverage purposes, because of a ruling of the Prohibition Bureau to the effect that the official fluidextract of ginger is a nonpotable beverage, thus removing the restriction from its sale. The disease that has come to be designated as "ginger paralysis" could scarcely have been caused by the familiar U. S. P. fluidextract; otherwise the morbidity would have been much greater and the incidence of the paralysis far more widespread. Many of the victims freely admitted having used fluidextract of ginger for years without effects other than those attributable to its alcohol content; hence the conclusion that an adulterated and poisoned product was being circulated for sale last winter.

An investigation was undertaken by the United States Public Health Service[1] as soon as the seriousness of the situation became manifest. Many puzzling features attended the early clinical examinations. The quantity of the ginger fluid consumed was apparently not the determining factor in the seriousness of the symptoms. A single drink is known to have produced essentially the same result as that following prolonged use of the product over a period of some days. Transitory alcoholic intoxication often occurred, as might be expected; but the really untoward symptoms were delayed, usually about ten days. The victims presented bilateral wrist drop and foot drop of varying degrees of severity. The picture became that of a flaccid paralysis for the most part of the distal muscles of the lower and upper extremities, pointing to involvement of the lower motor neurons localized in the lower lumbar and lower cervical regions of the cord. The unsuspected presence of arsenic or lead and other heavy metals in the beverage was soon ruled out by careful chemical examination of samples of the offending product. Phenol compounds were found to be present.

The familiar phenols, such as carbolic acid, are prompt in their toxic action, in contrast to the delay in the paralysis produced in the ginger victims. Confusion was added by the observation that, whereas rabbits and calves responded to the dangerous fluidextracts somewhat as the human victims did, monkeys seemed to be immune. The effective investigations of Smith, Elvove and their co-workers[1] in the Public Health Service seem to have fixed responsibility for the unusual human disease on tricresyl phosphate, and more specifically on the triorthocresyl isomer. The pharmacology of this unsuspected product was not known until the present occasion for its investigation. The systemic action of ordinary cresols is prompt; that of the cresyl phosphate is slow. It is assumed by the government pharmacologists to be absorbed as such, rather than hydrolyzed in the alimentary tract of man. It is further postulated that the substance has a special selective affinity for nervous tissue, where it may be disintegrated in situ. Such behavior would explain the long latent period in the onset of the paralysis and the persistence of the toxic action.

The details of the mode of action need to be worked out further, but the complicity of the triorthocresyl phosphate can no longer be doubted. Investigation and inquiry have revealed, by way of confirmation, that an adulterated ginger prepared by addition of technical tricresyl phosphate to U. S. P. fluidextract of ginger made to approximate the composition of the suspected toxic gingers behaved like them in pharmacologic tests on susceptible animals. The precise reason for including triorthocresyl phosphate, which is now revealed as a highly specific poison, in commercial ginger extracts is not known. Smith and his colleagues regard it as reasonable to suppose that it was included there by unscrupulous producers on account of its physical or other properties that make it difficult to distinguish from the normal ginger constituents. Only a chemist of some ability, the government report adds, could have thought of this; and had there been anything known about the pharmacologic action of the substance and the possible dire consequences, it is probable that it would never have been used and the disasters would never have happened. The elucidating research illustrates what may be expected from the newly organized National Institute of Health, where the investigation of ginger paralysis has been prosecuted. Smith and

1. Smith, M. I.; Elvove, E., and others: Pharmacological and Chemical Studies of the Cause of So-Called Ginger Paralysis: A Preliminary Report, Pub. Health Rep. **45**: 1703 (July 25) 1930. Smith, M. I.; Elvove, E., and Frazier, W. H.: The Pharmacological Action of Certain Phenol Esters, with Special Reference to the Etiology, Second Report, ibid. **45**: 2509 (Oct. 17) 1930.

Elvove have expressed a wonder whether there are not many other organic compounds of great pharmacologic interest, perhaps some with therapeutic possibilities, awaiting the attention of the pharmacologist. This question may well form the basis for part of the program of the national institute. To unscrupulous manufacturers the study of the unexpected menace attending unwarranted adulteration of foods and drugs should be a lesson of far greater impressiveness than the mere fear of convictions and fines. The producers of the noxious ginger extracts have unwittingly become potential murderers rather than merely criminal purveyors of adulterated products.

THE DEATH OF PROFESSOR EIJKMAN

The death, at the age of 72, of Dr. Christiaan Eijkman, professor of hygiene in the University of Utrecht and a Nobel prize laureate of recent years, deserves more than passing notice. He has long enjoyed the distinction of being the scientist who first produced experimentally a disease of dietary origin. His researches paved the way for the discovery of the vitamins and much of the investigation of recent times in the field of nutrition. Eijkman's pioneer studies related in particular to the long puzzling malady of the Far East known as beriberi. This disease, a peripheral neuritis resulting in paralysis, had been known from remote times. The popular belief was that it must be due primarily to an infection, though there were physicians who assumed that the disorder might be referred to faulty diet. In 1884, Admiral Takaki of the Japanese navy became converted to the idea that foods richer in protein than those commonly consumed by the sailors, who subsisted largely on rice and were prone to develop beriberi, might bring relief. He made a crucial test. A Japanese training ship with 276 men on board set out for a nine months' cruise. During this time 169 cases of beriberi developed, with 25 deaths. Soon thereafter another training ship with a similar crew started over the same route, but its diet was radically changed. The most marked departure in the regimen was to reduce the quantity of rice and include a fairly liberal supply of milk and meat. The change, a reviewer [1] writes, was nothing short of miraculous. During ten months only fourteen cases of beriberi developed, and every one of these men had refused to adopt the modified diet. Beriberi thus came to be looked on as a protein deficiency disorder.

Years later, about 1896, a chance observation by Eijkman turned attention to other possibilities. This Dutch physician was stationed at that time in the Dutch settlement in Java. He noted a peculiar outbreak of disease among fowls that were being fed cooked rice discarded from the kitchen of the hospital to which he was attached. The symptoms were characteristically like those of natives who developed beriberi and the malady was designated by Eijkman as polyneuritis gallinarum. This astute observer promptly followed up these earlier observations by an investigation that showed that a diet of polished rice always induced polyneuritis in birds, and that it could be averted or cured by the use of unmilled rice or rice polishings in the food. For the first time, Harrow writes, physicians had a readily available means of studying a disease that had wrought havoc to vast populations. A new era in experimentation was begun.

It matters little that Eijkman failed to identify correctly the substance in rice polish and other food materials that prevents experimental polyneuritis. The essential feature of his researches is the application of new methods of study and the revision of scientific points of view. The soil that Eijkman prepared lay fallow for more than a decade before noteworthy progress followed. Funk, in particular, took up the question of the nature of the active principle—the protective or curative agent that averts beriberi—in 1911. From this has developed the present-day knowledge of the vitamins.

1. Harrow, Benjamin: Vitamines, Essential Food Factors, New York, E. P. Dutton & Co., 1921.

REPRODUCTION AND EXCESS PROTEIN IN THE DIET

The question of the most favorable amount of protein in the diet is not new. In the first few years of the present century the advocates of a liberal protein allowance, largely in Germany, were opposed by the proponents of the strict limitation of protein, the chief of whom were Chittenden in this country and Hindhede in Denmark. When, on the other hand, through the classic studies of Fischer, Kossel, Osborne and Mendel, and Hopkins the importance of quality of protein was emphasized, the question of quantity was lost sight of temporarily. However, the present decade has seen a revival of interest among students of nutrition in the effects of high concentrations of dietary protein on the organism. The problem has been attacked both in the laboratory with experimental animals and in the clinic, and vast amounts of data have accumulated. Since the kidney is the organ primarily involved in the excretion of the products of the metabolism of protein, the attention of investigators in this field has naturally been focused on the possibility of demonstrating a nephrotoxic action of excessive concentrations of this foodstuff. In some of the studies a more definite answer has been sought by removing one kidney in order to increase the burden on the remaining one. However, in view of the apparent simplicity of the thesis, the results have been surprisingly inconclusive. After studying the available evidence, two reviewers [1] have come to the none too sure conclusion that most of the data favor the view that high levels of protein in the diet do not exert an unfavorable influence on the kidney.

1. Mitchell, H. H.: Biochemistry of the Amino Acids, 1929, p. 550 et seq. Du Bois, E. F.: J. Am. Diet. A. 4: 53, 1928.

In spite of the importance of the kidney in protein metabolism, it is possible that other body functions may be altered by unduly large amounts of dietary protein. In a recent report by Parsons, Smith, Moise and Mendel [2] are given the results of an extensive investigation of the influence of protein-rich rations on various phases of the reproductive cycle. The rations, which contained 16, 40 and 70 per cent of protein, were otherwise complete and some of the animals (albino rats) were subjected to unilateral nephrectomy. It was early observed that high concentrations of protein had no deleterious effect on ovulation, the estrous cycle being regular even in the animals with only one kidney. Gestation likewise proceeded without toxic symptoms even on the extreme rations employed. Lactation, however, was not even approximately successful on the diet richest in protein until further additions of vitamin-containing materials were made. Thus it appears that, of the various phases of the reproductive cycle, only lactation is adversely affected by the combination of greatly heightened protein metabolism and reduction in renal tissue.

Significant observations on the kidneys of mother and offspring were made also by Parsons and her co-workers. The average degree of enlargement of the remaining kidney after unilateral nephrectomy and after sixty days on the protein-rich diet was 106 per cent in those females which had no young, 111 per cent in those in which only gestation was permitted, and 154 per cent in the group that experienced both gestation and lactation. This last response of the kidney to high concentration of protein is notably larger than that occurring in male rats under similar dietary conditions and points to a definite effect of milk production on those processes in the body with which renal function is associated. Twelve animals with one kidney were given the protein-rich diet for periods ranging from 106 to 184 days, during which one or more litters of young were reared. Histologic examination of the remaining kidney at necropsy showed severe lesions in only three cases. The kidneys of the young of a group of animals consuming the protein-rich ration were compared with those of the offspring of another group on the low-protein food before the young had begun to eat the mother's ration. The ratio of kidney weight to body weight of the first group was significantly greater than that of the second group. It seems, therefore, that the substances which influence the size of the kidney during heightened protein metabolism are transmitted through the mother's milk.

From these studies it appears that not until the maternal organism feels the stress of the elaboration of milk do the circumstances surrounding the high level of protein metabolism exert an unfavorable influence. In spite of the augmented degree of nitrogen metabolism, the reduction of functioning renal tissue and the stress of reproduction, the kidneys show relatively little damage. The enlargement of the maternal kidney as well as that of the kidneys of the suckling young can be looked on as a result of the physiologic response to increased functional demands. These studies emphasize anew the remarkable factor of safety possessed by the renal excretory apparatus and also the intensity and the widespread nature of the demands for lactation.

2. Parsons, Helen T.; Smith, A. H.; Moise, T. S., and Mendel, L. B.: Diet and Tissue Growth, Arch. Path. **10**: 1 (July) 1930.

Current Comment

THE SYMPTOMS OF VITAMIN A DEFICIENCY

Most of the symptoms of so-called dietary deficiencies developed by a shortage of vitamins in the food have been established by experiments on animals. To what extent they are actually represented in human disorders is only slowly becoming known. In the case of man, defects in nutrition are likely to exhibit simultaneously multiple symptoms that have diverse causes, so that it becomes difficult to disentangle the manifold etiologic factors in the disease syndrome. The investigator who deals with experimental animals is able to select his dietary conditions so as to exclude many of the simultaneous variables that might modify the result. This helps to explain why his observations are not always matched in the categories of human disorder. There is little doubt regarding the importance of the fat-soluble vitamin A in human nutrition; yet the most conspicuous of the manifestations of vitamin A deficiency in rats, on which the pioneer investigations have been conducted, is the characteristic ophthalmia, a phenomenon only rarely recorded for man. It is significant, therefore, to learn from observations of Tilden and Miller [1] at the Rockefeller Institute for Medical Research, New York, what the deficiency symptoms are that monkeys tend to manifest when vitamin A is missing from their diet. The first symptom of illness noted in the monkeys receiving the low vitamin A ration was loss of weight, which was followed sooner or later by loss of appetite and finally by colitis and death. There was no xerophthalmia, sinusitis or mastoiditis, and abscesses of the tongue were not found in any of the animals. Keratomalacia and hemeralopia in human beings have been attributed to deficiency of the A factor in the diet. Other conditions in animals or man that have been attributed to this cause are diarrhea, respiratory disturbances, urolithiasis, calcification of kidney epithelium, edema and gastric carcinomas. With regard to the signs of depletion of vitamin A reserves in monkeys, Tilden and Miller say that in one respect, at least, the response of the monkey is the same as that of the rat and the guinea-pig; namely, in the epithelial metaplasia which manifests itself particularly in the respiratory and genito-urinary tracts. The New York investigators remark that the total absence of eye lesions in the monkeys, and of infections of the sinuses, middle ear and glands of the tongue, as compared with the

1. Tilden, E. B., and Miller, E. G., Jr.: The Response of the Monkey (Macacus Rhesus) to Withdrawal of Vitamin A from the Diet, J. Nutrition **3**: 121 (Sept.) 1930.

rather frequent occurrence of these signs in rats, is of especial interest. A similar observation has been made by Wolbach and Howe with respect to the guinea-pig. In view of the delicacy of the monkey, as compared with the rat, however, and the possibility that the monkey succumbs to the intestinal condition before the development of other symptoms, Tilden and Miller are not altogether sure that the monkey may not, under certain conditions, manifest the nutritional failure in other ways. Perhaps in view of the report just reviewed, more attention should be centered on a possible interrelation between alimentary symptoms and vitamin A deficiency in man.

RECENT STUDIES IN UNDULANT FEVER

Hasseltine [1] of the United States Public Health Service has recently summarized the results of his field investigations of undulant fever in the United States. The disease was recognized in every state of the Union during 1929. Epidemiologic data indicate that the cases of undulant fever as they occur in this country can be divided into three main groups: the milk group, without significant exposure to live stock or animal carcasses (mostly urban cases); the farm group, in which are included the rural cases having direct contact with live stock, and the meat group, consisting of urban cases having direct contact with live stock or carcasses. In regard to the question as to the relative pathogenicity of the types of *Brucella* organisms which may be found in raw milk, Hasseltine says: "It makes no difference whether a patient receives a bovine, porcine or caprine type of *Brucella* through the raw milk he consumes; the fact that he contracts a preventable disease through such channels is what makes the matter of first importance." Hasseltine further says: "In cities having only a portion of their milk supply pasteurized, undulant fever has picked out the user of raw milk with as much precision as smallpox picks out the unvaccinated." Contact with infected animals, particularly with infected hogs, frequently results in infection; such cases are usually severe and sometimes fatal. The application of the agglutination test to cattle, and the segregation and ultimate elimination of those reacting positively, appears to be the logical method for eliminating the infection at its source. It is probable that only a few of the infected cows will escape detection by the agglutination test, and these will probably be found on retests of the herd. Hasseltine states that, to the health official, the greatest weakness of the procedure of examination of live stock and the elimination of infected animals is the length of time it will take to accomplish this gigantic task. For the protection of the health of the people it is necessary to rely on such measures as education of those whose occupation brings them in direct contact with infected animals, and on pasteurization to prevent milk-borne cases. It is further emphasized that examination of milk by ordinary bacteriologic methods does not reveal the presence of *Brucella* therein, as these organisms grow too slowly to appear visible in twenty-four hours. Therefore, a milk that has an exceedingly low bacterial count may be heavily contaminated with the organisms of undulant fever. Since the organism has its source in the cow's udder, no amount of cleanliness, inspection or sterilization of utensils will be of any account unless the cow is known to be free from *Brucella* infection. Hasseltine's studies have led him to the conclusion that the pasteurization of milk renders it safe and takes care not only of undulant fever but of all other communicable diseases transmitted by milk.

1. Hasseltine, H. E.: Recent Progress in Studies of Undulant Fever, Pub. Health Rep. **45**: 1660 (July 18) 1930.

CARDIAC FIBROSES

In the St. Cyres lecture, Dr. John Cowan [1] recognized three sources of fibrosis of the heart: myocarditis, ischemic necrosis and syphilis. Myocarditis is found not only as a result of rheumatic infection but also, though less commonly, as a complication of many acute infections: pneumonia, pleurisy, diphtheria, sepsis, smallpox, typhoid, scarlatina and blackwater fever. Syphilis may affect the heart muscle through the formation of gummas, though this is rare. The common attack on the heart muscle is through disease of the coronary arteries with resulting ischemia. The damage resulting from occlusion of a coronary artery depends on the rapidity with which it is occluded, a slower process giving better opportunity for the development of anastomotic circulation. Angina pectoris is regarded as the symptom of an ischemic heart, the evidence of a local anoxemia. The doctrine of Wenckebach that "in angina pectoris we should not look for a bad heart muscle; the part of the aorta adjoining the heart is the seat or the origin of the pain" [2] is ignored. Dr. Cowan accepts the theory of an ischemic origin of the pain on the experimental evidence of MacWilliam [3] and the clinical and necropsy analysis of Keefer and Resnik.[4] Under conditions of rest and tranquillity it is supposed that the heart muscle may receive an adequate supply of oxygen, but granted exertion or a slight rise in blood pressure from excitement or other cause and the supply of oxygen becomes deficient, the pain of angina is the result. In diagnosis the electrocardiogram is of value only if the fibrosis happens to strike the bundle branches; in other situations it will do nothing to deform the electrocardiographic picture. In the former case some clinical evidence of heart block may be expected and, indeed, in almost all cases of myocardial fibroses some changes in heart sounds or in the outline of the heart are to be expected. The prognosis is difficult; although early death is the rule, some patients recover a degree of health and activity. Dr. Cowan mentions one patient who carried a full heart block for thirty years until his death at the age of 70. In general the prognosis will depend on the cause of the ischemia or inflammatory fibrosis and its amenability to treatment. Syphilitic lesions may improve notably under antisyphilitic treatment, while atheromatous lesions cannot be dissipated, though the progress of the sclerosis

1. Cowan, John: The Fibroses of the Heart, Lancet **2**: 1 (July 5) 1930.
2. Wenckebach, K. F.: Angina Pectoris, Bull. Battle Creek Sanit. **19**: 65 (March 24) 1924.
3. MacWilliam, J. A., and Webster, W. J.: Brit. M. J. **1**: 53 (Jan. 13) 1923.
4. Keefer, C. S., and Resnik, W. H.: Angina Pectoris, Arch. Int. Med. **41**: 769 (June) 1928.

may be delayed. The final issue of acute myocardial disease, whether inflammatory or ischemic, depends on the treatment of the initial attack. Dr. Cowan keeps his rheumatic patients in bed for two months after the temperature and pulse rate have returned to normal. Similarly, rest is indicated after an infarct and must be absolute, even though it is necessary to employ sedatives to this end. Rest again in cases of insidious origin will delay critical effort and give time for the development of anastomotic circulation. When exercise is resumed it must be kept well within the diminished capacity of the damaged heart.

Association News

ABSTRACT OF MINUTES OF MEETING OF BOARD OF TRUSTEES HELD IN CHICAGO, NOV. 13 AND 14, 1930

The Board of Trustees met in Chicago on Thursday and Friday, Nov. 13 and 14, 1930.

MEMORIAL FOR PHYSICIANS WHO SERVED IN THE WORLD WAR

A committee was appointed, composed of Drs. Olin West, Morris Fishbein and William Gerry Morgan, to institute a campaign to raise $10,000 by popular subscription among the members of the Association, with the assistance of the state societies, to provide in Pershing Hall—America's Memorial to the Commander-in-Chief, Officers and Men of the American Expeditionary Forces, which is under construction at 49 Rue Pierre-Charron, Paris, by the American Legion Building Paris, Inc.—a suitable memorial to the officers and men of the Medical Corps who served and gave their lives in the World War.

BUREAU OF ECONOMICS

Applications for the position of Director of the Bureau of Economics were considered, but definite action was postponed pending further consideration.

DUTIES OF COMMITTEE ON POISONOUS GASES ENLARGED

The duties of the Committee on Poisonous Gases were enlarged to include any hazard to health or life from poisonous substances developed through modern activity.

COOPERATION BETWEEN FEDERAL AND STATE GOVERNMENTS IN PUBLIC HEALTH ACTIVITIES

Consideration was given to the resolution passed by the House of Delegates providing that the Board of Trustees initiate, as speedily as practicable, a movement to enlist every state medical association and county medical society, and every member of the medical profession in a movement to carry into effect the policy of the American Medical Association with respect to cooperation between federal and state governments in public health activities. The Board feels that everything possible is now being done along these lines.

FIRE IN PROPERTY OWNED BY ASSOCIATION

A report was received concerning two fires which had recently broken out in buildings east of the headquarters office that are owned by the Association. One of these buildings—that adjoining the headquarters—has been remodeled in accordance with authorization from the Board; an opening has been made into it from the headquarters, and it is being used to house one department and for storage purposes. The Board referred to a committee comprising the General Manager, the Business Manager and the local Trustee the matter of reconditioning or razing the other buildings that have been damaged by fire.

CHAIRMAN OF LOCAL COMMITTEE ON ARRANGEMENTS

The Board confirmed the nomination by the Philadelphia County Medical Society of Dr. George C. Yeager as chairman of the Local Committee on Arrangements for the Philadelphia session of the Association in 1931.

ACKNOWLEDGMENT OF GIFT TO HYGEIA

The appreciation of the Board was expressed to a physician who has contributed more than $5,000 to the Association within the last three years for subscriptions to *Hygeia*, mainly for libraries, and who prefers not to have his name revealed.

APPROPRIATION FOR INSPECTION OF HOSPITALS FOR THE CARE OF MENTAL PATIENTS

An appropriation of $20,000 was made available for the Council on Medical Education and Hospitals for an inspection of hospitals devoted to the care of mental patients, provided for in the resolution adopted by the House of Delegates at the Detroit session.

COMMITTEE ENLARGED

The committee appointed to cooperate with federal departments concerning regulations under the Volstead Act was enlarged by the addition of Dr. J. H. J. Upham of Columbus, Ohio, and Dr. Henry A. Christian of Boston.

The chairman of the committee, Dr. William H. Mayer of Pittsburgh, and the executive secretary of the Bureau of Legal Medicine and Legislation, Dr. W. C. Woodward, appeared before the Committee on Law Observance and Enforcement, November 12, and protested against the interference by legislation with the prescribing by qualified physicians of agents that they conscientiously believe to be useful in the practice of medicine.

RESIGNATION OF DR. DILLEHUNT FROM COUNCIL ON PHYSICAL THERAPY

The Board accepted the resignation of Dr. Richard B. Dillehunt of Portland, Ore., who asked to be relieved because of his inability to give to the affairs of the Council on Physical Therapy the attention they require, and to attend the meetings of the Council, owing to the great distance to Chicago.

DANGERS INVOLVED IN THE INDISCRIMINATE USE OF ACETANILID AND BARBITAL

A report from the Council on Pharmacy and Chemistry, recommending that the public be educated concerning the dangers involved in the indiscriminate use of acetanilid, especially of acetanilid-containing nostrums, and barbital was adopted.

REPORT OF CHAIRMAN OF COMMITTEE ON ENTERTAINMENT AT ANNUAL SESSIONS

The report of Dr. Austin A. Hayden, chairman of the Committee on Entertainment at Annual Sessions, covering tentative arrangements for the President's reception on Thursday evening of the week of meeting, as well as for entertainment in the form of supper-dancing and cards to be available to the visiting physicians and their guests at a nominal fee throughout the week, was adopted and placed on file.

MISCELLANEOUS BUSINESS

Other matters were given careful deliberation; some were referred to committees, and action on some was postponed.

MEDICAL BROADCAST FOR THE WEEK

American Medical Association Health Talks

The American Medical Association broadcasts at 10 a. m. on Monday, 10:15 on Tuesday, 10:30 on Thursday and 10 on Saturday, over Station WBBM (770 kilocycles, or 389.4 meters).

The program for the week is as follows:

December 1. The Prevention of Some of the Common Diseases of the Skin.
December 2. Cancer Control — A Public Health Problem.
December 4. The Proposed Home for One-Legged Canary Birds.
December 6. The Problem of Sweets for Children.

Five Minute Health Talks may be heard over the Columbia Broadcasting System daily except Sundays and holidays, from 12 to 12:05 p. m.

The program for the week is as follows:

December 1. How's Your Digestion?
December 2. Personal Preferences.
December 3. Commendable Cooks.
December 4. More About Cooks.
December 5. Overconfidence.
December 6. The Pace That Kills.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARKANSAS

Licenses Revoked.—At a meeting of the State Medical Board of the Arkansas Medical Society, November 11, the license to practice medicine in the state of Dr. Abraham M. Goldstandt, Columbus, Ohio, was revoked on the grounds that the credentials on which this certificate had been issued were revoked in Ohio, April 1, for grossly unprofessional or dishonest conduct. The license of Dr. William W. Hornsby, North Little Rock, was also revoked at this meeting. Dr. Hornsby had been convicted and sent to prison for violating the narcotic act.

Society News.—The First Councilor District and Northeast Arkansas Medical Society was entertained by the Craighead-Poinsett County Medical Society, at Tyronza, October 15; among other speakers were Drs. William R. Bethea, Memphis, Tenn., who spoke on "X-Rays as a Benefit to the General Practitioner," and Jones H. Lamb, Paragould, "Methods of Treating Arterial Hypertension."——The Arkansas County Medical Society was addressed at DeWitt, October 14, by Drs. Milton C. John, Stuttgart, on icterus neonatorum; Robert H. Whitehead, infantile paralysis, and C. W. Rasco, diphtheria. ——Dr. George B. Fletcher discussed the outstanding symptoms of mental disease before a recent meeting of the Hot Springs County Medical Society at Malvern.——The Independence County Medical Society was addressed at Batesville, October 13, by Drs. Thomas N. Rodman on "Cardiac Arrhythmias"; John M. Hooper, "Carcinoma of the Gallbladder"; O. S. Woods, Salem, "Tumor of the Mediastinum," and Frank A. Gray, "Diagnosis and Treatment of Carcinoma of the Uterine Cervix."

CALIFORNIA

Hospital News.—The Ernest V. Cowell Memorial Hospital was dedicated, October 21, at the University of California, Berkeley; the dedication was a part of the ceremonies in connection with the inauguration of Robert Gordon Sproul as president of the university.

Society News.—Dr. Arthur Elmer Belt presented a motion picture on "The Habits and Urinary Tract of the Cetaceans" before the Los Angeles Surgical Society, November 14; Dr. David G. Ghrist, Rochester, Minn., spoke on "The Present Status of Therapy in Chronic Rheumatic Diseases with Special Reference to Surgical Procedures."——The San Diego County Medical Society was addressed, November 12, by Dr. Howard L. Updegraff, Hollywood, on "Methods of Reconstructive Surgery."—— At the eighty-third semiannual meeting of the Southern California Medical Association in Long Beach, October 31-November 1, the following officers were elected for the ensuing year: Drs. Fred B. Clarke, Long Beach, president; William H. Barrow, San Diego, and Philip H. Stephens, Los Angeles, vice presidents, and Carl R. Howson, Los Angeles, secretary. The next annual meeting will be held at Coronado in April, 1931.——The Alameda County Medical Association was addressed in Oakland, November 17, by Drs. William W. Cross, Jr., Oakland, on urinary tract obstruction; Charles L. McVey, on syphilis of the mouth, and Harry J. Templeton and Charles J. Lunsford, on "Sporotrichosis in California."——Rear Admiral Edward R. Stitt, U. S. Navy, addressed the Los Angeles County Medical Society, November 20, on annual health examinations in the navy during the past twenty years. ——The Clinical and Pathological Society was addressed in Los Angeles, November 25, among others, by Dr. Charles C. Browning on "Extensive Emphysema Throughout the Muscles and Subcutaneous Condition of the Chest, Secondary to Pathologic Fracture of the Rib," and Dr. Wilbur B. Parker, "Intravenous Pyleography by Means of Uroselectan."——Drs. Hans E. Schiffbauer and John W. Nevius addressed the Trudeau Society, November 25, on "Resection of First Rib Anteriorly with Phrenic Exeresis" and "Problems in Artificial Pneumothorax," respectively.——Among others, Drs. Eliot Alden, Los Angeles, and Douglas Quick, New York, addressed the Hollywood Academy of Medicine, December 3, on "Present Status of Cancer of the Breast" and "Intra-Oral Malignancies—Diagnosis and Treatment," respectively.

DELAWARE

Health at Wilmington.—Telegraphic reports from seventy-eight cities with a total population of thirty-five million to the U. S. Department of Commerce, for the week ending November 15, indicate that the highest mortality rate was for Wilmington, and the mortality rate for the group of cities as a whole, 12.1. The mortality rate for Wilmington for the corresponding week last year was 13.9, and for the group of cities, 11.3. The annual rate for seventy-eight cities was 11.9 for the forty-six weeks of 1930, as against a rate of 12.7 for the corresponding weeks of 1929. Caution should be used in the interpretation of weekly figures, as they fluctuate widely. The fact that some cities are hospital centers for large areas outside the city limits, or that they have a large Negro population, may tend to increase the death rate. The rates published in this summary are based on midyear population estimates derived from the 1930 census. Cities whose population was found to be less than was indicated by estimates heretofore used will therefore appear as having a higher death rate than usual, even though there may have been no material increase in the actual number of deaths.

ILLINOIS

Campaign Against Cancer.—Dr. Andy Hall, state health director, has announced that five state-wide medical and health organizations have formed an agreement to carry out a vigorous anticancer campaign over the state. The cooperating organizations are the Illinois Department of Public Health, the educational committee of the Illinois State Medical Society, the Educational Association on Cancer, the Illinois branch of the American Society for the Control of Cancer, and the University of Illinois College of Medicine. Special emphasis will be made in an educational drive to halt the increase of cancer on visible parts of the body. The program will include the publication of an illustrated booklet for free distribution throughout the state and for the building of a mobile exhibit made up of wax models, actual specimens, pictures and charts which show cancer of accessible parts of the body, in all of its recognized stages and forms, and a cancer week program.

Society News.—The Southern Illinois Medical Association held its fifty-sixth annual meeting in Mascoutah, November 6-7. The program included papers by Drs. John Niess, Jr., Carmi, on "Effects of Tonsillectomy on the General Health"; Quitman U. Newell, St. Louis, "Remarks on Treatment of Sterility in the Female"; Clyde E. Purcell, Paducah, Ky., "Foreign Bodies in the Respiratory and Food Passages"; William D. Chapman, Silvis, "Medical Organization and Practice"; William H. Evans, Murphysboro, "The Family Physician and the Ex-Service Man." The Canti and Lewis cancer films and Dr. DeLee's three reel film on "The Toxemias of Pregnancy" were shown. Officers elected were president, Dr. Charles W. Hall, Mount Vernon; vice presidents, John E. Reed, Benton, and Charles S. Skaggs, East St. Louis, and secretary, William J. Benner, Anna. The next annual meeting will be held in Olney.——"Syphilis of the Nervous System" was the subject of Dr. H. Douglas Singer, Chicago, November 19, before the Will-Grundy County Medical Society.

Chicago

Society of Allergy Organized.—The Chicago Society of Allergy, which has been meeting informally, was formally organized, November 12. Meetings will be held the third Monday night of each month and scientific programs will be presented. All interested are invited. Drs. Harry L. Huber and Leon Unger were elected president and secretary, respectively.

Society News.—Dr. Herman L. Kretschmer delivered the Mayo Foundation lecture on neurology at Rochester, Minn., November 3, on "Diseases of the Urinary Tract in Infancy and Childhood."——The fifteenth annual meeting of the Institute of Medicine of Chicago will be addressed, December 2, by Dr. George E. Shambaugh on "The Problem of Deafness," and Dr. George Burgess Magrath, Boston, "Some Personal Experiences as a Medical Examiner."——Dr. Abraham Myerson, Boston, addressed the Illinois Society for Mental Hygiene, November 25, on "Inheritance and Environment: Their Effect on Personality."——Madame N. Dobrovolskaya-Zavadskaya of the Curie Institute, Paris, France, lectured at Northwestern University Medical School, November 24-25, on "Some Important Notions from Radiology" and "About the Heredity of Cancer."

Patients Desired for Study of Pneumonia and Hypertension.—The department of medicine of the University of Chicago, in the pursuance of studies of pneumonia, has set

aside beds in the Albert Merritt Billings Hospital for the admission, free of charge, of patients whose financial circumstances warrant such consideration. The Lasker Foundation and the department of medicine of the university, which has undertaken a long term of clinical study of hypertension, have arranged for the admittance, free of charge, of cases to the Max Epstein Clinic. The type of patients desired are those less than 40 years of age with high blood pressure and without other symptoms, and patients less than 40 years of age with high blood pressure and other indications of chronic Bright's disease. Such patients will be admitted as ambulatory and will be hospitalized only if necessary. Patients with a fair prospect of being available over a period of years will be given preference.

MARYLAND

Sir D'Arcy Power Lectures at Johns Hopkins. — A series of lectures is being given at the Institute of the History of Medicine, Johns Hopkins University School of Medicine, by Sir D'Arcy Power, England, honorary librarian of the Royal College of Surgeons. His subjects, November 19 and 25, were "Essentials of Medical Biography" and "Medical Bibliography," respectively. He will speak on "The Meals of Our Ancestors," December 2; "Aristotle's Masterpiece," December 3; "Medical Iconography," December 10, and "The Growth of a Hospital," December 17.

Society News.—The West Baltimore Medical Society was addressed, October 21, by Drs. Llewellyn W. Lord, Baltimore, on "End-Results in the Treatment of Acne with X-Rays"; John A. Evans, Baltimore, "Differential Diagnosis of Pathology with the Thorax by Means of the X-Ray," and John F. Hogan, Baltimore, "The Peculiar Course of a Bullet Lodging in the Epididymis."——The third meeting of the Baltimore and Washington Urological Society was held, November 7, in Baltimore; Washington physicians delivered the papers, which were discussed by Baltimore physicians; Drs. Robert Arthur Hooe, Washington, D. C., spoke on "Prostatectomy Complicated by Acidosis"; Horatio N. Dorman, "Hydronephrosis with Aberrant Polar Vessel"; Ralph M. LeComte, "Papilloma in a Vesical Diverticulum," and Charles P. Howze, "Multiple Calculi Within the Utricle: Operation and Results."

MASSACHUSETTS

Society News.—The annual meeting of the Massachusetts Society for Mental Hygiene was addressed, November 18, in Boston, by Sheldon Glueck, Ph.D., on "Modern Trends in Criminology," and Dr. George H. Preston, commissioner of mental hygiene of Maryland, on "Community Mental Hygiene."——The Massachusetts Psychiatric Society was addressed, October 24, by Dr. Albert Warren Stearns on "A State Program of Crime Prevention."

Dr. Duke-Elder to Lecture at Harvard.—Two lectures on "Recent Work on the Metabolism of the Eye" will be delivered at Harvard University Medical School, under the auspices of the Howe Laboratory of Ophthalmology, by Dr. William Stewart Duke-Elder, London, England, in Amphitheater E. The lectures will be given December 15 and 17 on "Physiologic Aspects" and "Clinical Aspects," respectively. Dr. Duke-Elder is honorary research associate at University College, London, and lecturer of ophthalmology, University of London.

Hospital News.—The Somerville Hospital, Somerville, is soon to have an addition to its surgical and obstetric departments involving an expenditure of $150,000, it is reported.——Ground has been broken for the Jackson Memorial Building, a forty-five bed hospital for children to be used by the Boston Floating Hospital for all year care. At the same time the New England Medical Center building, of which the Jackson Memorial will be a part, was started. The Center building will include, among other things, professional services and a twenty bed observation ward. The Tufts College Medical School is the other unit of the New England Medical Center.

MICHIGAN

Licenses Reinstated and Revoked.—The Michigan State Board of Registration in Medicine reports that the license of Dr. John J. George was reinstated, October 15; that Dr. John L. Estabrook's license was revoked, owing to his having obtained money from his patients and others on false pretenses; that Dr. George W. Leuschner's license was revoked, owing to his association with an unregistered practitioner of medicine, and unprofessional and dishonest conduct in his practice. Dr. George W. Bolkcom, Minneapolis, the board stated, made periodic tours throughout the state of Michigan, advertising in the local newspapers before his visits; his license was revoked, owing to his unprofessional and dishonest conduct in his practice. Dr. Sidney H. Culver's license was revoked, as he had been convicted on a charge of abortion, May 29, at Mason.

Five Year Research on Dental Problems.—Representatives of the medical and dental professions held a conference on cooperative research in Detroit, September 7-8. The conference, sponsored by the Children's Fund of Michigan and the Merrill-Palmer School, inaugurated an enlarged plan of research on the growth of the dental apparatus and related parts under the direction of Samuel J. Lewis, D.D.S., following a preliminary five year study recently completed. The program, to be financed by the Children's Fund, comprises a study of growth fluctuations based on taking the impressions of teeth and dental arches and anthropometric measurements of the head and face of a group of 500 children, ranging in age from 2 to 10 years, once a year for five years. Intra-oral and extra-oral dental roentgenograms of the entire group will be taken in a study of the shedding of deciduous teeth, the eruption of the permanent teeth and the development of the third molars. Roentgenograms of the hands and elbows of the entire group will be taken to secure correlations between dental, carpal and epiphyseal growth. Impressions of the upper arches and roentgenographic studies of the sinuses and jaws will be made of a group of new-born babies to secure measurements for comparing the growth curves of dental arches and other growth curves of the human body. The impressions of teeth and dental arches of parents of a selected group of fifty children taken over a five year period will be the basis of studies of the part played by heredity in the dental growth and development. The study will center also on the relation between diet and dental growth in caries. The Merrill-Palmer School, the Children's Hospital of Michigan, the Protestant Orphanage of Detroit and the Methodist Children's Village are cooperating in supplying children and records for the study.

MINNESOTA

Reprints of Clinical Conferences. — The *Journal-Lancet* has announced that the series of clinical pathologic conferences which it has published monthly during the year will soon be available in index, loose-leaf reprints. About 250 cases will appear each year. The work will be under the direction of Dr. Elexius T. Bell, professor of pathology, University of Minnesota Medical School, Minneapolis.

Illegal Practitioner Sentenced. — The Minnesota State Board of Medical Examiners recently reported that Elmer Mason entered a plea of guilty to a charge of practicing healing without a basic science certificate at Winona. Mason was the leader of a group of Indian doctors who, during July and August, sold between four and five thousand dollars' worth of Indian roots and herbs to the citizens of Fillmore and Houston counties. Judge Gates sentenced Mason to serve three months at hard labor in Houston County. Another member of the group has completed a sixty day sentence in the county jail of Houston.

MISSOURI

Court Reverses Board's Decision.—Circuit Judge Hall, St. Louis, reversed the state board of health's decision, October 20, in revoking the license to practice medicine in Missouri of Dr. William R. Harman, Springfield. Dr. Harman's license had been revoked in June on the charge that he had produced an abortion. (THE JOURNAL, July 5, p. 55.)

Society News.—The Kansas City Society of Ophthalmology and Otolaryngology recently started the publication of a monthly bulletin. Dr. Burt R. Shurly, Detroit, addressed the society, September 18, on "Some Observations on Vitamin Deficiency, Relative to the Eye, Ear, Nose and Throat, with Especial Reference to Vitamin A. Deficiency in Diseases of the Paranasal Accessory Sinuses, from the Research Laboratory of the Detroit College of Medicine."——The fall tournament of the Physicians' Golf Club and the Dentists' Golf Club of St. Louis was held at the North Hills Country Club, October 17. A team of twelve members from each club played for the Dr. Rutherford B. H. Gradwohl trophy, the physicians winning. This was the second contest between the clubs. The first tournament, July 11, resulted in a tie. These facts are engraved on the trophy, which will be displayed at the St. Louis Medical Society.——Dr. Wilfred E. Martin addressed the Lafayette County Medical Society, October 28, at Odessa on "Diagnosis and Treatment of Infantile Paralysis."——"New Methods in Treatment of Fractures" was the subject of Dr.

Myron O. Henry, Minneapolis, before the Jackson County Medical Society, November 18; the society was addressed, November 25, by Drs. Julius Frischer, Kansas City, on "Transurethral Surgical Diathermy for Prostatic Hypertrophy"; John Wesley Field, "Clinical Psychology," and Otto J. Printz, "Surgical Treatment of Peptic Ulcers." Dr. Ferdinand C. Helwig conducted a clinical pathologic conference.

NEW YORK

Society News.—"Kidney Disease from the Newer Concepts of Its Diagnosis and Treatment" was the subject of Dr. William Goldring's address before the Medical Society of the County of Nassau, October 28.—Dr. Charles Ward G. Crampton, New York, addressed the Medical Society of the County of Albany, November 18, on "Making the Periodic Health Examination Practical," and Dr. Nellis B. Foster, New York, "Some Diseases Recognizable in the Preclinical Stages."——The Medical Society of the County of Kings was addressed, November 18, by Dr. Arlie V. Bock, Boston, on "Physiological Changes Induced by Exercise"; Dr. Robert Tait McKenzie, Philadelphia, "Exhaustion as Shown in the Face," and Charles E. Barker, Grand Rapids, Mich., "Value of Exercise from the Preventive and Remedial Viewpoint." An afternoon session, open to the public, was addressed by the same speakers on "Exercise and Health," "Fatigue and How to Recognize It," and "How to Live One Hundred Years," respectively.——A symposium on peptic ulcer was conducted before the East New York Medical Society, November 24, by Drs. Isidore A. Feder, Reuben Finkelstein and Albert A. Berg.

Hospital Referendum Carries.—Voters of Nassau County carried the hospital referendum by a vote of 8 to 1, November 4, which approved of a bond issue of $1,750,000 for the erection of a 200 bed county general hospital which should have special provisions for the care of contagious and venereal diseases, chronic, curable and convalescent patients and the treatment of psychopathic cases. Ninety thousand dollars of the sum will be used for land and the remainder for buildings. The proposed hospital will cost each taxpayer only 19 cents for each $100 of assessed valuation, should the entire amount be paid in one year. The present general hospitals in Nassau County are private institutions, and the only one operated by the county for the care of the sick is the tuberculosis sanatorium at Farmingdale. The new appropriation marks the culmination of eight years of effort on the part of the Medical Society of Nassau County to obtain more adequate hospital accommodations. A particularly interesting feature of the campaign and an important factor in securing sympathetic public interest was the medical society's exhibit at the annual county fair, in which special emphasis was placed on the need of a new county hospital. The project was further stressed by the distribution of hand bills comparing present facilities with minimum requirements and describing the size, nature and cost of the proposed institution.

New York City

Third Harvey Lecture.—Dr. G. Elliot Smith, University College, London, England, will deliver the third Harvey Society Lecture at the New York Academy of Medicine, December 4, on "The Peking Man."

Dr. Dougherty Honored.—Dr. Daniel S. Dougherty was honored, November 6, at a testimonial dinner tendered by his colleagues on the medical board of City Hospital on the occasion of his retirement from active service as attending otolaryngologist. Dr. Dougherty has been a member of the board for twenty-three years, during fourteen of which he served on its executive committee. He has been professor of otology in the New York Polyclinic Medical School and Hospital during the past decade and, since 1916, served as secretary of the Medical Society of the County of New York and last year became its director of activities. In 1925, he became secretary of the state medical society.

Dr. Gregg Appointed Director of Medical Sciences.—Dr. Alan Gregg has been appointed director for the medical sciences of the Rockefeller Foundation. He will occupy the position vacated by the death, February 16, of Dr. Richard M. Pearce, Jr., in whose work he had for many years closely participated as associate director for the medical sciences. Dr. Gregg will assume his new duties, January 1. Graduating from Harvard University in 1911, and from the Harvard Medical School in 1916, Dr. Gregg, after a year as intern at the Massachusetts General Hospital, served overseas and was made a captain in the medical reserve corps of the British Army. On March 1, 1919, he first took up his work with the Rockefeller Foundation as a field staff member of the International Health Board. For three years he was actively engaged in public health work in Brazil. In 1922, he became associate director of the division of medical education. After making studies of medical education in a number of countries which included Colombia, Mexico and Italy, he was stationed at the Paris office of the Rockefeller Foundation, from which since 1925 he has been directing Rockefeller Foundation work in the medical sciences in Europe.

OKLAHOMA

Society News.—The next annual session of the Oklahoma State Medical Association will be held, May 11-13, 1931, at Oklahoma City with headquarters in the Shrine Temple.——The Tulsa County Medical Society was addressed, November 10, by Dr. Dean W. LeMaster on "Treatment of Diabetes with Low Fat and High Carbohydrate Diets."——The third annual clinic day of the Tulsa Academy of Medicine was held at Morningside Hospital, Tulsa, November 18; Dr. Meyer Wiener, associate professor of clinical ophthalmology, Washington University School of Medicine, St. Louis, conducted a clinic in the afternoon on plastic surgery of the eyelids and spoke in the evening on "Certain Eye Conditions of Importance in the Work of the General Practitioner."——Dr. Fred G. Dorwart addressed the Muskogee County Medical Society, October 26, on heart conditions.——The Garvin County Medical Society was addressed, October 22, in Pauls Valley by Dr. Floyd Gray, Oklahoma City, on obstetrics.——The Okmulgee-Okfuskee County Medical Society was addressed at Okemah, October 20, by Drs. Frank LeRoy Carson, Shawnee, and Edward K. Witcher, Tulsa, on "Sodium Amytal Anesthesia" and "Use of Iodized Oil in Chronic Pelvic Disorders," respectively.——Drs. Hugh G. Jeter and Willis K. West, both of Oklahoma City, spoke on nephritis and deformities of the arm, respectively, before the Caddo County Medical Society, October 22, at Anadarko.——The Lincoln County Medical Society was addressed at Chandler, October 1, by Drs. Horace Reed, Oklahoma City, and Marvin B. Glismann, Okmulgee, on goiter and obstetrics, respectively.

OREGON

Food Poisoning Traced to Pie.—An explosive gastrointestinal outbreak occurred at Reed College, Portland, during September. A large number of students became violently ill, due to eating contaminated pie. All the blood specimens from patients at the college that were tested gave some agglutination with *Bacillus paratyphosus* B but not with *Bacillus paratyphosus* A. Twenty-nine of the cases required hospital treatment, and forty or fifty were cared for in homes or dormitories. There were no fatalities. Transmission of the infecting agent was supposed to be due to mice.

Society News.—The Portland City and County Medical Society was addressed, October 1, by Drs. William K. Livingston on "Studies of the Sympathetic Nervous System"; Drs. Albert L. Mathieu, Frank E. Trotman, Howard D. Haskins, Edwin E. Osgood and Joyce Albert presented a joint paper, October 15, on "Sedimentation Rates in Gynecology and Obstetrics: Results by the Modified Westergren Technic in Over 2,200 Determinations on 1,200 Patients"; Dr. John C. Brougher, Vancouver, Wash., spoke on "Parathyroid Tetany."——Dr. Goodrich C. Schauffler, Portland, addressed a joint meeting of the Central Willamette Medical Society and the Polk-Yamhill-Marion Medical Society, October 7, at Corvallis on "Gynecology in Infants and Female Children."

PENNSYLVANIA

Health Centers Opened.—Six health centers for children from infancy to 6 years were recently opened in Schuylkill County by the Anti-Tuberculosis Society in cooperation with the state department of health. Examining physicians refer cases with handicaps to the family physician and send recommendations to the parents. The centers are open one day in the first week of each month.

Personal.—The forty-fourth annual dinner of the Association of Resident and Ex-Resident Physicians of the Philadelphia General Hospital will be held, December 2, at the Pennsylvania Hotel, Philadelphia. The dinner is in the form of a testimonial to Mr. George Taggart. Ex-interns are requested to notify the secretary, Dr. George Wilson, 133 South Thirty-Sixth Street, Philadelphia, of change of address.——At a regular meeting of the state board of medical education and licensure, November 13, at Harrisburg, Dr. Irvin D. Metzger, Pittsburgh, was elected president, and Charles D. Koch, deputy superintendent of public instruction, was elected secretary.

Society News.—The Berks County Medical Society was addressed, October 14, by Dr. Robert M. Alexander, Reading, on "Heart Disease from the General Practitioner's Standpoint."——Dr. Orlando H. Petty, Philadelphia, addressed the Blair County Medical Society, September 30, on "Obesity and Its Treatment."——A discussion of pernicious anemia formed the scientific part of the program of the Clarion County Medical Society in Knox, October 28.——Drs. Frank F. D. Reckord, Allen Z. Ritzman and Louis W. Wright, Harrisburg, conducted a symposium on pneumonia before the Dauphin County Medical Society, October 14.——Dr. Ralph H. Knapp, Youngsville, gave a summary from the recent literature on nephritis before the Warren County Medical Society, October 20, and Drs. William M. Cashman and Hamblen C. Eaton, Warren, spoke of the use of the new mercurials in relieving edema.——"The Relation of Posture to Pain and Visceroptosis" was the subject of Dr. John B. Carnett, Philadelphia, before the York County Medical Society recently.——Dr. Daniel Longaker, Philadelphia, addressed the Northampton County Medical Society, November 21, on "Conservative Obstetrics."

Philadelphia

Personal.—A bronze portrait bust of Louis Pasteur, through the will of Arthur C. Hugenschmidt, D.D.S., a friend of the famous scientist, who died in Paris last year, has been sent to the University of Pennsylvania. The bust was first placed on public view in the school of medicine, October 10, when a two-day celebration commemorating recent progress in medicine was opened. Dr. Hugenschmidt, dentist to Pasteur, was presented with the bust by Madame Pasteur after her husband's death.

Society News.—A symposium on clinical allergy was conducted before the Philadelphia County Medical Society, November 26; Dr. Arthur Fernandez Coca, New York, spoke on "Etiology, Symptomatology and Diagnosis of Allergic Disease"; Drs. James H. McKee, Martin E. Rehfuss, Harry P. Schenck and John H. Stokes took part in the discussion.——Dr. Louis D. Englerth, among others, addressed the Northern Medical Association of Philadelphia, November 17, on "The Treatment of Varicose Veins by the Injection Method."——The Physiological Society of Philadelphia was addressed, November 17, among others, by Drs. Isidor S. Raydin and Charles G. Johnston on "The Absorption of Sodium Chloride from the Intact Gallbladder."——The West End Medical Society's program, November 19, consisted of a symposium on abdominal pain; the speakers were Drs. Joseph E. Kaplan, Samuel L. Immerman, Benjamin B. Rittenberg and Abraham Trasoff.

TEXAS

East Texas Healthcade.—A group of health workers, driving by automobile, recently spent five days covering 1,000 miles on a fixed itinerary, visiting forty-one towns, where they delivered 188 addresses to 18,000 listeners. The movement was inaugurated jointly by the director of the public health department of the East Texas Chamber of Commerce and the state department of health, headed by Dr. James C. Anderson, Austin, state health officer.

Changes at University of Texas.—Among the changes on the faculty of the University of Texas School of Medicine, Galveston, that were recently announced are: A. Lawrence Bennett appointed as associate professor of psychology, succeeding Philip L. Gray, resigned; Dr. William L. Marr, instructor in the practice of medicine, succeeding Dr. James A. Bradley, resigned; Dr. Harriss Williams transferred from experimental surgery to surgical pathology, and Dr. Robert M. Moore, appointed to succeed him.

Society News.—At a recent meeting of the Texas Association of Sanitarians, its name was changed to the Texas Public Health Association; Dr. Harry K. Read, Houston, was reelected president, and E. G. Eggert, sanitary engineer for the state department of health, reelected secretary.——The Texas Pediatric Society was addressed, October 28, in Fort Worth, among others, by Drs. Roy P. Forbes, Denver, on "Use of Catarrhal Vaccine in the Treatment of Respiratory Conditions"; William Weston, Columbia, S. C., "Foods That Do Not Nourish," and Josephine B. Neal, New York, "Encephalitis in Children."——The proceeds from the sale of "The Medicine Man in Texas," a history of the pioneer physicians of the state, of which the woman's auxiliary of the state medical association is sponsor, are to be used for a loan fund for the senior medical students at the University of Texas.——The Texas Interurban Club of Internists held a study week at the Mayo Clinic, Rochester, Minn., September 22-26. The program consisted of a series of lectures of vascular, renal and cardiac disease, medical seminars on gastro-enterology and other subjects, a conference on pathologic anatomy in relation to clinical observations, and symposiums on metabolic disorders and thyroid disease. Evening lectures were delivered by Drs. Frederick P. Moersch on "Multiple Sclerosis," and J. B. Doyle, "Encephalitis Epidemica."

GENERAL

Complimentary Copies of Biographic Sketches.—There are available for presentation by the author a number of copies of the Biographical Sketches and Letters of T. Mitchell Prudden, M.D., by Lillian E. Prudden, which pupils of Dr. Prudden might be happy to have. If requests for the book are sent to Miss Lillian E. Prudden, 424 Whitney Avenue, New Haven, Conn., they will be complied with as long as the presentation copies last.

Hygeia for School Teachers.—Two hundred and sixty-six subscriptions to *Hygeia* were recently secured by Dr. Earl F. Morris, director of health and physical education, Kansas State Teachers' College, Hays, Kan., to be sent to the student teachers in the college. Among other *Hygeia* subscriptions recently received are fifty-six from the woman's auxiliary of the Stark County Medical Society, Canton, Ohio, for teachers of that county. The principal of the Fair Oaks Public School, Fair Oaks, Ind., recently ordered twenty-one subscriptions to be sent to the schools in that community.

Dr. Williams Retires as Director of National Committee.—At the twenty-first anniversary meeting of the National Committee for Mental Hygiene, November 13-14, in New York, it was announced that the major objective in the committee's activities in the near future would be a nation-wide program of research in mental hygiene in cooperation with American universities. It will be carried on by Dr. Clarence M. Hincks, Toronto, Ont., the new general director who succeeds Dr. Frankwood E. Williams, New York, who, January 1, will retire after fourteen years of service. Dr. Hincks is founder and director of the Canadian National Committee for Mental Hygiene and vice president of the International Committee for Mental Hygiene. Dr. Charles F. Martin, Montreal, discussed the progress of mental hygiene work in Canada; Dr. Ralph A. Noble, Sidney, New South Wales, reviewed the work done in Australia, and Mr. Clifford W. Beers, founder and secretary of the National Committee and of the American Foundation for Mental Hygiene, outlined plans for international activities in mental hygiene work. Officers elected were honorary president, Dr. William H. Welch, Baltimore; president, Dr. Charles P. Emerson, Indianapolis, and secretary, Mr. Clifford W. Beers, New York.

Society News.—The next semiannual meeting of the Society for the Study of Asthma and Allied Conditions will be held in New York, December 6, at the New Yorker Hotel. This society is a limited organization, membership to which is by invitation only, to men who not only specialize in immunology but also have done real scientific work.——The Radiological Society of North America will hold its annual meeting in Los Angeles, December 1-5; among the speakers will be Drs. Emil G. Beck, Berkeley, whose subject will be "Cooperation Between Surgeon and Radiologist Essential to Effective Cancer Therapy"; Webster W. Belden, New York, "Further Observation of Osteitis Deformans"; Joseph C. Bloodgood, Baltimore, "Relative Merits of the Irregular Practitioner, Particularly in Relation to Cancer"; Carl H. Parker, Pasadena, Calif., "Treatment of Compressed and Impacted Fractures of the Bodies of the Vertebrae"; William Edward Chamberlain, San Francisco, "Bone and Joint Changes of Leprosy"; Robert S. Stone, San Francisco, "X-Ray Findings in the Chests of Tuberculin-Positive Children," and Harry M. Weber, Rochester, Minn., "Roentgenologic Manifestations of Tuberculosis in the Alimentary Tract," and Jesse W. M. Du Mond, Ph.D., and Archer Hoyt, Ph.D., Pasadena, "Present Status of the Problem of Measurement of X-Ray Intensity and Quality."——On call of the surgeon general of the U. S. Public Health Service, a conference of health and welfare workers was held in Washington, D. C., October 29, to consider ways and means of controlling the high mortality of colored people in rural communities and congested cities. The committee was formed to consider the year-round health movement with Dr. George W. Bowles, York, Pa., chairman. Plans are made for observance for the next Negro health week, which includes the birth date of Booker Washington, April 5.——"Undulant Fever from a Physician's Standpoint" and "Newer Aspects of the Prevention of Tuberculosis" will be the subjects of Drs. Richard A. Kern, Philadelphia, and Jay A. Myers, Minneapolis, before the thirty-fourth annual meeting of the United States Live Stock Sanitary Association, December 3-5, in Chicago.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Nov. 8, 1930.

The Public Health

In his annual report for 1929, Sir George Newman, chief medical officer of the ministry of health, again calls attention to the falling birth rate. The natural increase of population by births over deaths is now less than half what it was so recently as the period 1921-1925. The principal causes of death per thousand deaths were: diseases of the heart and circulation, 225; respiratory diseases, 157; cancer, 107; diseases of the nervous system, 82; tuberculosis, 71. There was lost to the insured population alone by sickness or disablement 29½ million weeks' work. A large section of the report is devoted to maternal mortality, which is lower in London than in any other part of the country, both for puerperal fever and for other causes, and high in the industrial North and in Wales. Where the maternal mortality is high the infant mortality also tends to be excessive. Effective antenatal supervision of every case of pregnancy is declared to be needful and there is also a need for improved obstetric practice.

BIRTH CONTROL

Considerable space is devoted to birth control. It is laid down that organized instruction in contraceptive methods is foreign to the purpose of a maternity and child welfare center established by a local authority for nursing and expectant mothers, would militate against the object of its establishment, and might well be alien to its clients. But "in exceptional circumstances, when avoidance of pregnancy seems desirable on medical grounds, the mother attending the center should be referred for advice as to birth restriction to a private practitioner attached to or recommended by the center, or to a suitable hospital or clinic. It is pointed out that birth control is not a novel idea but has existed from the earliest times. The only change is that it has become more conscious, concrete and talked about, and more artificial in method. The change was not necessarily evil nor did it raise new moral issues. It has brought definite relief to a large number of persons from immediate difficulties. However, its indiscriminate advocacy has had many disadvantages. Organized public instruction is liable to become propagandist and pseudo-authoritative and to lead to commercial exploitation. The effects may be not only local and physical but general, organic, psychologic and even antisocial. The means may be deleterious in their results and are in any case uncertain in their action. There is no guarantee of value, physical, moral or humane. Birth control cannot be, in any case, a substitute for social amelioration, self-control, restraint or mutual consideration. It is doubtful whether there is sufficient unanimity in the medical profession or in public opinion as to contraceptive methods to justify a local authority supporting out of the taxes a center for systematic instruction.

THE INSURANCE MEDICAL SERVICE

The number of insurance practitioners in England and Wales was 15,573 and the average number of insured on one man's list was 932; 44 per cent of men physicians and 33 per cent of women are engaged in insurance practice. As to efficiency, it is declared that patients as a rule are considerate to their physicians and do not make unnecessary demands, and the physicians do their best for patients. But there are of course exceptions to both rules.

THE INCREASED SICKNESS CLAIMS

It has been shown in previous letters that excessive sickness claims are inherent in such a form of medical socialism as the insurance system, which, while excellent from the point of view of insuring persons against sickness who would be unable to pay for it in the ordinary manner, is not so in throwing the greater part of the cost on others, who derive no benefit from the system. There was a further increase in the number of sickness claims in 1929, which led to investigations. A scrutiny was made of a large sample of those cases which were referred from the insurance practitioner to the "regional medical officer" by the lodges when they doubted the claim. Many of these persons concerned avoided coming for examination by ceasing to draw benefits. The proportion was found highest in married women of 45 and under; single women came next, and both of these were much higher than the men or the married women of 46 and over. The large proportion of persons who ceased to draw benefit when referred after a short period of incapacity for some trivial cause, set out as catarrh, chill, cold, influenza or neuralgia, is noteworthy. It is admitted that in many of these cases a final certificate would have been given if the patient had not been referred. But it is stated that "when full allowance has been made for this, it is difficult to resist the conclusion that in many of these cases a final certificate ought to have been issued at an earlier date." The societies may be compelled for the protection of their funds to refer cases of this type at a much earlier stage of illness.

A RECORD CANCER DEATH RATE: "CANCER CURERS"

As the figures show, cancer is now the third of the great killing diseases. The number of deaths from cancer amounted to 56,896, which was 1,437 per million of population, the highest ever recorded, and 10 per cent of the total number of deaths. The rate has doubled since 1890 and trebled since 1870, and more than quadrupled since 1850. A curious change has taken place in the sex incidence. The susceptibility of females in 1851-1855 was more than double that of males, but in 1921-1925 the two sexes were approximately level and in the last few years the susceptibility of males has apparently been the greater. When a cancer "cure" is brought to the notice of the cancer committee of the ministry of health, information is asked as to the nature and composition of the remedy, authentic records of proved cases of success, and evidence that it is not harmful. It is found that the professed "cancer curer" is rather reserved in the presence of this investigation. It is admitted that he may cure some superficial cancer by caustics, but this action is well known to the medical profession and it is also known that removal can be effected more quickly and usually more painlessly and with less disfigurement by surgery. Charlatanry more often than ignorance seems to be the trouble with the cancer curer. He trades on the facts that some cancers are difficult to diagnose, that his preparations sometimes lead to healing of the local disease, and that, on the part of the public, fear of the disease, ignorance and the secrecy with which the treatment is enshrouded combine to make people ready victims.

The Liquor Problem in Great Britain

Further important information on the drink question is furnished by a government blue book just published. Jan. 1, 1929, there were in England and Wales 78,307 saloons licensed for the sale of intoxicants for consumption on or off the premises and 22,171 for consumption off the premises, giving a proportion of 19.7 on-licenses and 5.6 off-licenses per 10,000 of population. In the decade 1895-1904 there was an average annual decrease of on-licenses of 486 and in the twenty-four years 1905-1928 of 882. Jan. 1, 1908, there was 1 on-license for every 367 persons; Jan. 1, 1929, only 1 for every 506. The number of convictions for drunkenness in 1929 was 51,966, against 55,642 for 1928, and was the lowest in any years since 1918. The cases in which the person convicted of drunkenness is reported to have taken methylated spirit decreased from 446 in 1928 to 409. Thus the great improvement in the habits of people with regard to indulgence in alcoholic drinks, which has been in progress for some generations, continues.

Eyesight Tests for Automobile Drivers

Under the new road traffic bill the following question was drafted to be put to applicants for a driving license: "Is your power of distant vision in one eye at least (with glasses if worn) not less than 50 per cent of normal?" After consultations between the minister of transport and the British Medical Association, the eyesight requirement was altered. The question now reads: "Are you able to read at a distance of 25 yards in good daylight (with glasses if worn) an automobile car plate containing six letters and figures?" In the opinion of the British Medical Association, any one who cannot bring his vision up to this standard with glasses cannot be regarded as a safe driver of an automobile. The second disability that will be regarded as an absolute bar to obtaining a driver's license is epilepsy or liability to sudden attacks of disabling giddiness or fainting.

PARIS

(From Our Regular Correspondent)

Oct. 29, 1930.

Postoperative Accidents in Cerebral Surgery

In an article in the *Presse médicale*, Dr. T. de Martel has reported the results of his wide experience with cerebral surgery and has described the nature and treatment of the accidents that may occur after the removal of brain tumors. In his opinion, such accidents are due to circulatory disturbances of the cerebrospinal fluid. The extravasated blood may clog the points of communication between the cavities in which the fluid circulates. There results an intraventricular hypertension, which distends the cavities of the ventricles and brings about an anemia of the compressed peripheral cerebral tissue. Under this pressure, the lower portions of the brain tend to protrude through the occipital opening. The upper centers are attacked first, which becomes manifest through loss of consciousness and coma; then the vegetative centers, the respiratory centers, and the heat regulatory centers are attacked. The patient dies in hyperthermia, with respiratory syncope. The treatment for these accidents was described by de Martel explicitly. The hyperthermia must be combated, it being of a physiologic nature and not infectious, by cold compresses and repeated intestinal irrigations with cold water. A lumbar puncture is done, or, better still, a cistern puncture, to be repeated until the fluid that emerges is clear. If the intraventricular hypertension recurs nevertheless, an intraventricular puncture should be done without delay. Finally, also intravenous injections of a 15 per cent hypertonic solution of magnesium sulphate render excellent service by diminishing, through osmosis, the amount of cerebrospinal fluid and the cerebral edema that sometimes follows the operative act, especially if performed with the electrical knife. Injections of epinephrine are useful when a lowering of arterial tension is associated with the hyperthermia. All these maneuvers when indicated necessitate prompt action, which requires every patient who has undergone a brain operation to be kept under constant supervision and in charge of extremely competent personnel.

Use of Ultraviolet Rays for the Destruction of Harmful Insects

An apparatus invented by Mr. Gourdin, and already in use in France and in Greece, utilizes ultraviolet rays to attract and to destroy nocturnal insects that cause harm to man and to agriculture. The apparatus is a sort of beacon, supplied with a mercury vapor lamp, which attracts insects and captures them in a reservoir trap. During an experiment carried out in the vicinity of Montpellier on a clear night, 545,073 insects were captured within two hours, of which 513,000 were anopheles mosquitoes, 3,200 cochylis and 12,000 butterflies. Further experiments, no less conclusive, have been carried out in Corsica, Algeria and Italy. The Société des viticulteurs of France, in recognition of the protection given to vineyards by the destruction of the insects that tend to destroy them, has bestowed a medal on the inventor. Great importance is attached to this invention for the prophylaxis of malaria.

Employment Bureau for Students

The cost of higher education and of living in general has created in Paris a situation that is exceedingly unpleasant for students of limited means. Many students find it necessary to eke out their slender income by serving, in the evening, as taxicab drivers or in other capacities. An employment bureau has been established by the Association des étudiants at its headquarters, 13 rue de la Bucherie, under the name of Office des travailleurs intellectuels, with a view to procuring for its members part-time work. A new occupation has been opened up to them through the initiative of the directors of theaters and motion picture houses: that of *placeur*, or usher. Heretofore the ushering has been done by women. It requires only a pleasant manner and a little dexterity of movement. The women who serve in that capacity are usually of the indolent sort. Often, when not busy, they stand about the corridors and converse among themselves, to the disturbance of the audience. The innovation has been welcomed by the public, which shows its sympathy for these courageous young men by giving them large tips. During the intermissions, they devote themselves to their books, which they bring with them and the audience is no longer disturbed by chattering in the corridors. The press has contained a number of articles on the subject. Feminine sympathizers complain because an easy source of revenue has been taken away from women who in this way were supplementing their otherwise meager incomes. In the main, the innovation is approved by the public. It is well for the public to know that an intellectual career often requires great sacrifice and that the professions are overcrowded because they attract too many young men—far beyond the needs of the country.

Ceremonies Honoring Ambroise Paré

The Academy of Medicine devoted a recent session to honoring the memory of Ambroise Paré, the "father of French surgery." Prof. Jean-Louis Faure was selected to deliver the memorial address. In the beginning of his career, Paré was an ordinary "barber," being authorized only to shave the beard, to cut the hair and to practice bleeding according to the recognized indications of that period (1509-1590). Later, he became attached for two years as assistant to the Hôtel-Dieu de Paris, and it was there that he saw operations performed according to the customs of his time, which included the use of the cautery and dressings of boiling oil, which accomplished a veritable antisepsis, though in a cruel fashion. Paré was the first to apply arterial ligatures in amputations, in opposition to the belief of Hippocrates that it is best to allow wounds to bleed to prevent inflammatory congestion. He was the surgeon of Francis I, Henry II, Charles IX, Henry III and Henry IV. He died at the age of 80. During the massacre of the Huguenots and the sad days of St. Bartholomew, Charles IX protected him, although he was a Protestant, by concealing him, at the Louvre, in his own apartment. He had considerable trouble in securing the diploma of the Royal College of Surgeons, as one of the requirements for a candidate was that he should defend his graduation thesis in Latin, a language with which he was not on the best of terms. He succeeded in getting his diploma only through the intervention of the king. In spite of this, his keenness of observation, his inventive genius, his manual dexterity and his unimpeachable professional honor won for him the title that posterity has bestowed on him for more than three centuries and caused him to be lifted up as the model of a surgeon.

Death of French Physiologist Gley

Dr. Emile Gley, an eminent French physiologist, died recently in Paris. Born at Epinal, in 1857, after pursuing his studies in

the Facultés de médecine de Montpellier and de Nancy, in the Facultés des Lettres de Nancy and de Paris, in the Collège de France, and in the laboratoire de Marey, secured the diplomas of doctor of medicine and licencié-ès-lettres. Gley was awarded on several occasions the title of "laureate" of the Academy of Medicine and of the Academy of Sciences. Former agrégé professor of the Faculté de médecine de Paris, he became later occupant of the chair of general biology in the Collège de France. He was likewise the correspondent of various foreign academies. His researches embraced a broad field of physiology (functioning of the heart, coagulation of the blood, innervation of the lymph vessels, antitoxin function of the liver, functions of the thyroid gland and of the parathyroid glands, rôle of the suprarenal glands, internal secretions). He was a former president of the Academy of Medicine. Last July, the Institut de France bestowed on him one of the Osiris prizes. He was the author of "A Treatise on Physiology," which has remained a classic.

TURKEY

(From Our Regular Correspondent)

Ankara, Oct. 30, 1930.

Third National Medical Congress

The third national medical congress was held, September 17-19. Ismet Pasha, the prime minister, in the opening address mentioned that the maximum number of students had been admitted to the medical school this year, but there still would be in the future a scarcity of physicians and it would be necessary to arrange for another medical center. The minister of health and social assistance, Prof. Dr. Refik Bey, presided. The foremost subjects for discussion were syphilis, cancer and scarlet fever. Drs. O. Sherefeddin and A. Shukri reported on the biology of syphilis and on syphilis laboratories, Drs. H. Reshad, H. Behdjet and F. Kerim on the clinical aspects of syphilis, and Dr. Talat on the treatment of syphilis. Drs. Hamdi Suat, Saim Ali and Lutfi reported on cancrology, Drs. A. Kemal and Burhaneddin on the surgical treatment of cancer, and Drs. S. Mehmed and T. Remzi on radium treatment of cancer. Drs. Server Kiamil and Hasan Vasif reported on scarlet fever. The congress was open to miscellaneous subjects, among which were roentgen treatment of asthma, cancer and the pathologic laboratory, syphilis of the stomach, malaria treatment of syphilis of the nervous system, the treatment of tetanus, the relation of race to cancer, cancer in Turkey, cancer of the upper respiratory tract, relation of cancer and syphilis, rachitis from the social point of view, smallpox vaccine and its subcutaneous application, scarlet fever studies of the ministry of health, bone tumors and the value of roentgen diagnosis, Wassermann reaction in advanced age, syphilis and bismuth, measures against the practice of abortion, proprietary medicines of Turkish origin, an uncommon form of encephalitis, frontal sinus coccidiosis of the right eye, measurement of intensity of natural ultraviolet rays in Turkey, and observations from the mental hygiene point of view.

In order to provide meetings and to further surgical publications it was decided that the surgeons organize a Turkish surgical society.

The 1,500 pages of reports have been distributed to each of the 500 congress members who then had an opportunity to visit the exposition which had been arranged in connection with the congress. Here proprietary medicines, medical and surgical instruments of Turkish and foreign origin, together with casts of the hygiene museum, health posters, health propaganda publications and diagrams of the ministry of health were on exhibition. The collections in connection with the development of vegetable, animal and human cancer as related to the discussions exhibited by Prof. Dr. Hamdi of the pathologic laboratory of the medical faculty proved to be of great interest.

The next congress is to be held in 1931 again in Ankara. The minister of health, Prof. Dr. Refik Bey, has been reelected president. The chief topics for discussion are to be the questions of nutrition in urban and rural communities, infant and child nutrition, and rachitis.

Children Excluded from the Cinema

Until now there has been no special law in Turkey excluding children from motion picture houses. At all performances, small children and even infants can be observed in such places. Often the young mother has no reliable person at home with whom to leave the child, and the young woman of the present day is much interested in the cinema. She is now at liberty to go pretty much were she pleases. For the reason that among the poor classes the old custom of going everywhere *en famille* is still adhered to, it is no rare occurrence for the audience at the height of a performance to be disturbed by the wails of nurslings.

Diseases of the respiratory tract and infectious disease in children can often be traced to the fact that the children have been taken to the cinema, where they have sometimes remained for hours and where overcrowding, smoke and vitiated air are so often prevalent.

Article 164 of the new public health law, which goes into effect November 6, makes it prohibitive for children under 6 years to be taken to the cinema. Children from 6 to 12 years may visit the cinema until 8 p. m. Exhibitors are obliged to put up notices in large letters and in conspicuous places. Children found in cinemas contrary to the provisions of the law will, if necessary, be forcibly removed and their parents or wards as well as the cinema proprietors fined in order to safeguard the health of growing children.

The Child Care Department of the Istanbul Asylum

As the new municipal law provides for certain regulations in regard to child welfare work, the municipality of Istanbul has prepared a program in which the first step is to broaden the activities of the Istanbul asylum for the old and infirm, where deserted infants are cared for also. In the future, preschool children in need of state protection are to be received there. Arrangements are to be made for good physical care and also for the mental development of these children.

BERLIN

(From Our Regular Correspondent)

Nov. 3, 1930.

The Importance of Psychic Processes

In an article in the *Deutsche medizinische Wochenschrift*, Prof. G. von Bergmann of Berlin emphasizes the importance of the psychic for the treatment of the physical. While a few physicians of the old régime (for instance, Hufeland, in his "Makrobiotik") recognized the influence of emotions on the bodily functions, more precise research on the subject was not done until recent years, especially since the Russian psychologist Pavlov established by his famous experiment on dogs the existence and the mode of origin of a psychically induced secretion of gastric juice. It has been shown by hypnotic experiments on man that the mere suggestion that a fine meal is spread before one may stimulate the secretion of the gastric juice. If one looks through a "celluloid window" set experimentally in the abdomen of a rabbit, it may be observed that an active movement of the whole intestinal canal begins when a turnip is shown to the hungry animal. If, however, the ear of the rabbit is then pinched, under the influence of the pain the intestinal movements will quiet down and the intestine will become pale. At the mere suggestion of physical work that is to be done with the right arm, the right arm becomes heavier owing to the influx of a greater blood supply. These remarkable facts attracted attention before they were understood. As far back as 1834, Beaumont reported observations on Alexis St. Martin, who had a stomach fistula through which one could observe that, when the subject was influenced by fear or anger, the

gastric walls became red and dry and lost their shiny appearance, while the gastric secretion was diminished. Some time ago, a man was presented at clinical lectures who gave evidence of a chill, accompanied by trembling and goose-flesh, when he caught sight of the physician in his white overgarment standing near him, suffering from the delusion that the physician was a snow man and that he himself was standing nude out in the cold. Many such illustrations of the influence of the mind on the body can be given. Such connections are, however, much more subtle than is commonly supposed. The approach of a sick spell is heralded often by a change of mood and of disposition. We are irritable, low spirited and "nervous." The "cold" or the sore throat does not appear until the day following. Certain contagious disorders or mild poisonings are, according to the observations of Bergmann, more easily recognizable by observation of psychic behavior than by the study of clinical symptoms, which fact should be utilized more than it is for the diagnosis. "There are for the physician," he writes, "a great number of observations through which the subtle subjective perception of the patient will furnish important points of evidence, whereas the much coarser objective observations fail completely to accomplish the purpose; for instance, fatigue, weakness of memory, absentmindedness and mental excitement are often subtle indicators when it is impossible to recognize a poison by chemical means, a cell injury through an anatomic examination or a disturbed functioning as an objectively discoverable manifestation. Therefore, the subjective complaint of the patient often becomes for the internist the most important, and, not infrequently, the only evidence of illness." These foreshadowings of sickness may consist of an exalted mood and increased activity; for example, in alcoholic intoxication or following an injection of morphine. Another example: A senior student in the "gymnasium" is happy over the fact that he no longer needs to resort to strong coffee in order to keep awake. His drowsiness has disappeared, and he memorizes his odes from Horace with great ease, whereas previously it required great effort. A few days later he dies from epidemic encephalitis. The increased memorizing capacity was only a foreshadowing of a grave brain disorder. The study of personal character is an inherent part of the study of the constitution, and it is important for the physician to know how his patient "steps" in both a literal and a figurative sense of the word; how he shakes hands; how the most delicate motions are revealed as graphic strokes in the handwriting; in short, even how he clears his throat and expectorates. From the study of the physical bases of psychic moods, certain conditions may be more accurately understood; for instance, the idea of convalescence. So long as all that was known was that the patient was no longer ill but was not yet well either, the physician had to be content with such complaints during convalescence as: "I am tired, weary, have no desire to work." Now, however, it has been shown that, for weeks after a sore throat or pneumonia, when temperature, blood picture and other reactions have long become normal, the cell composition of a blister produced artificially on the skin is still abnormal; that is, it still presents a changed behavior in the organism. Thus a biologic explanation is available for the proverbial irritable mood of the convalescent patient.

Lead Poisoning from Tap Water

Lead poisoning from the drinking water has caused considerable anxiety in Leipzig. Professor Kruse and Dr. M. Fischer, who are connected with the Hygienisches Institut at the University of Leipzig, made a thorough investigation of the regrettable occurrence and have published a preliminary report of their conclusions, in the *Deutsche medizinische Wochenschrift*. Thus far, about 250 patients have received treatment, and it has been established that only persons who have a predisposition for lead poisoning become ill from the ingestion of lead with the drinking water. The water contains considerable lead not only after standing a long time in the water pipes but often after it has been in the pipes from one to four hours, so that water drawn from the pipes during the day may be dangerous if one does not allow it to run for a short time before using it. The water in the section of the city in which the cases of poisoning occurred was found to contain much larger quantities of lead than ordinary tap water has. The quantity ranged between 2 and 25.6 mg., the average being about 5.3 mg. The water is derived from two sources, recently reorganized. The present water supply in Leipzig attacks lead pipes much more intensely than the former supply, and the new lead pipes, from the standpoint of durability, do not stand up as well as those formerly employed. While the reasons for the recent epidemic of lead poisoning are not yet entirely cleared up, the assumption appears justified that the unfortunate event can be explained only by the coincidence of numerous factors difficult to weigh. The residents of the section of the city in question are able to protect themselves at present only by drawing off one or two pailfuls of water before beginning to use it. A further reorganization of the water system is, however, in progress and will be completed shortly whereby the whole water supply of Leipzig will be neutralized by solution of calcium hydroxide, thus removing all danger from lead poisoning from tap water.

The Determination of Blood Groups and the Courts

The Württemberg ministry of justice calls attention to the fact that, in cases involving fatherhood and maintenance obligation, the courts, not infrequently, put the child's mother under oath as to her testimony and then enter an order for an examination of blood groups. To prevent perjury, the courts are now advised in such cases to reverse the order and to proceed first with the determination of the blood groups and then, if necessary, to place the child's mother under oath. In this manner, by holding before the witness the results of the blood group determination, one can frequently prevent statements being sworn to that do not harmonize with those results. This order of procedure is in accordance with the trend that is becoming more and more evident in the prosecution of justice in the German courts whereby, through more skilful handling of the taking of evidence, perjury may be prevented.

Continuation of the International Hygienic Exposition in Dresden

It had been the intention to close the Internationale Hygiene-Ausstellung Dresden, October 12. In spite of bad weather, which cut down the attendance, nearly three million persons visited the exposition. But, in order to score the success in Germany and in foreign countries to which the exposition is entitled, a much greater attendance is needed. A large number of investigating commissions have visited the exposition. Since, in 1931, few, if any, large expositions are announced for Germany next year, the Dresden exposition will be opened again in 1931. The famous exhibit of modern hospitals and their equipment will be preserved complete. Many of the set-ups will be reorganized, and other set-ups entirely new will be added. Also the foreign exhibit, which is housed in the Staatenhaus, will be enriched by the addition of material, much of which, owing to the short time allowed for the preparation of the exposition of 1930, could not be assembled. Considerable material from America has already been promised. Another new set-up will be a general survey of Catholic missionary enterprises in foreign countries. It is the intention of the committee to secure a large attendance of the public. A special and regular train service from all parts of Germany and from many points in foreign countries will therefore be organized.

Seventieth Anniversary of Berlin Medical Society

October 29, the Berliner Medizinische Gesellschaft convened in special assembly in honor of the seventieth anniversary of its existence. The society arose in 1860 through the merger

of two older societies, under the chairmanship of the founder of modern ophthalmology, Albrecht v. Graefe. The chairmanship then passed to the director of the Chirurgische Universitätsklinik, Bernhard v. Langenbeck; then to Rudolf Virchow; Ernst v. Bergmann, surgeon: Senator, internal clinician; Orth, pathologic anatomist, and Kraus, internist. Since its foundation, the society has been the scientific center of the medical profession of Berlin. The transactions of the Berliner Medizinische Gesellschaft receive widespread attention throughout Germany and are noted in foreign countries. The present chairman, Geheimrat Goldscheider, gave, in his address, a survey of the development of the art of healing during the past seventy years as reflected in the activities of the society, and then digressed to the present reduced economic status of physicians. After the secretary, Professor Adam, had given a survey of the history of the society, Prof. Martin Hahn, hygienist at the University of Berlin, delivered an address on "Hygiene of a Metropolis." He brought out that the mortality in the large cities, as far as acute infectious diseases are concerned, is not higher than in the country as a whole. One of the most difficult problems in the hygiene of large cities is the increased mortality of men of the 30 to 70 age groups, in contrast with the mortality of women of the corresponding ages. This greater mortality of men in these years of full earning capacity is doubtless due chiefly to alcoholism, tuberculosis, venereal diseases and occupational injuries. If we are to continue to compensate for the decline in the birth rate by reducing the mortality in the large cities, we must not stop with the combating of acute infectious diseases but must attach equal importance to the fight against the chronic injuries of metropolitan life, which is, to be sure, even more difficult. The first step in this direction is the improvement of housing conditions. The provision of an adequate supply of water for metropolitan areas is becoming an increasingly difficult problem. Since the large volume of water taken constantly from the Spree area, near Berlin, is gradually impairing navigation, and the lowering of the water level of the Spree leads to contamination of its waters, a collection of the water in the lakes of the Spree forest or the installation of a powerful pumping plant on the banks of the Oder will soon become necessary, to maintain Berlin's water supply. The demand for water, caused by the growth of industries, the increase in the number of private bathrooms and the more widespread use of hot water installations with the accompanying waste of water, has led naturally to an increase in the amount of refuse water, which can no longer be deposited on the fields adjacent to Berlin. For that reason, Berlin is constructing a large purification plant.

It would be well for the youth of the large cities if the many school reforms were not tried out on them, for they are already inclined to be precocious. Also the numerous diversions and stimulations in the form of field excursions, lectures, motion pictures, "shows," theatricals, journeys even to foreign countries, offered to children nowadays go beyond their needs, since they are naturally mentally active and inclined to be somewhat "nervous." What they need for a healthy mental and physical development is more concentration and better opportunities to participate in family life.

In closing, Hahn emphasized that an annual voluntary examination of supposedly healthy persons would contribute greatly toward the early recognition of chronic injuries incident to the life of a large city and would tend to preserve the sense of responsibility that still remains after the decline of recent years.

Who Should Hold the Title of "Professor"?

The executive committee of the Verband der Krankenhausärzte Deutschlands (league of hospital physicians of Germany) took up recently with the Prussian minister of public welfare the subject of the bestowal of the title of "professor" on physicians who are directors of hospitals and brought out that the term "professor" should be applied only to such persons as hold an official teaching position. That principle is widely neglected, even by the government itself. Since the title of "professor" in the mind of the people is supposed to evidence more than ordinary scientific qualifications, many eminent hospital directors who did not attain their post by way of a university career suffer a hardship both from the ideal and from the economic point of view. Many hospital directors who are not connected with any particular institution of learning are employed by the state for the training of medical practitioners and for the holding of graduate courses. The league requested, therefore, that the title of "professor" be bestowed again on hospital physicians with suitable scientific attainments. Under date of August 15, the Prussian minister of public welfare replied that he had frequently taken the stand that the service title of "professor" should be given physicians who are directors of hospitals but that, in view of the present wording of the constitution, there was no way in which that objective could be reached.

Capillaries and Physiognomy

Professor Bettmann, dermatologist, presented recently to the Heidelberg Academy of Sciences the results of his researches on the relations of the capillary forms of the lip to the physiognomy. According to his observations, the type of the capillaries of the lower lip has a direct relation to rest and forms of motion, tension and release of tension, types of development, age, sex, constitution; condition of the teeth, jaws, facial muscles, muscles of mastication; speech, tone and play of the features. The physiognomy is strongly influenced by the mucous membrane of the lip. The type of the capillaries is simple, scant and defective in primitive races in which play of the features is wanting; also in mental patients, and in aged persons it is more complex and more fully developed in actors, elocutionists, mimics, professional whistlers and players of wind instruments.

Anniversary of Society for Promotion of Graduate Instruction

The Dozentenvereinigung für ärztliche Fortbildungskurse of Berlin celebrated, October 16, its fiftieth anniversary. By providing opportunities for graduate instruction in medicine the society has contributed to the uplift of public health, and by attracting to Berlin at least an equal number of foreign physicians it has increased the prestige and the scope of the knowledge of German scientists. The society has always been ready to assume the task of cultivating personal relations between foreign and German physicians. The ceremonies, held in the Kaiserin-Friedrich-Haus, were opened with an address by Prof. Dr. Munk, the chairman of the society. Professor Adam, director of the Kaiserin-Friedrich-Haus, gave a survey of the history of the society.

Marriages

WILLIAM ANDREW BRUMFIELD, JR., Staten Island, N. Y., to Miss Elizabeth Mitchell Fagg of Blacksburg, Va., October 7.

DOUGLAS FAIRBANKS LOVE, New Market, Va., to Miss Dorothy Anne Settle of Amherst, October 16.

PATRICK HENRY WINSTON, Virgilina, Va., to Miss Lillian Frances Gayle of Stafford County, October 8.

CHARLES HENRY HENDERSON, Richmond, Va., to Miss Mary Virginia Chiles, Fredericksburg, October 1.

WILLIAM NASH THOMPSON, Stuart, Va., to Miss Opal Norene Ingram, in Danville, October 6.

IRVINE HEINLY PAGE to Miss Beatrice Delamater Allen, both of Melrose, Mass., October 28.

JOHN I. CHORLOG, Madison, Wis., to Miss Hazel I. Sheets of Clifton Forge, Va., recently.

RUFUS MARION DEHART, Floyd, Va., to Miss Rachel Bass of Richmond, October 21.

Deaths

William Mulholland Beach ✠ Pittsburgh; Jefferson Medical College of Philadelphia, 1889; member of the American College of Surgeons; chairman of the Section on Gastro-Enterology and Proctology, American Medical Association, 1918-1919; lecturer on anatomy at the University of Pittsburgh, 1889-1892; past president and secretary of the American Proctologic Society; an organizer and for many years on the staff of the Presbyterian Hospital; on the staff of the Southside Hospital, 1906-1911; member of the board of trustees of the Waynesburg (Pa.) College; aged 71; died, October 23, of bronchopneumonia.

Junius Clarkson Hoag, Chicago; Chicago Medical College, 1882; member of the Illinois State Medical Society; member of the American College of Surgeons; at one time instructor and demonstrator of obstetrics at his alma mater; past president, vice president and secretary of the Chicago Medical Society; on the staffs of St. Luke's Hospital, Mercy Hospital and the Provident Hospital; aged 72; died, October 25, of carcinoma of the ascending colon.

Archibald Neil Sinclair ✠ Honolulu, Hawaii; University of Glasgow Medical Faculty, Glasgow, Scotland, 1894; member of the American College of Physicians and the Society of American Bacteriologists; past president of the Territorial Board of Medical Examiners, and the Hawaii Territorial Medical Society; medical director of the Leahi Home; aged 59; died, October 21, of heart disease.

Andrew Bartholomew Somers, Omaha; Medical Department of Columbia College, New York, 1872; member of the Nebraska State Medical Association; professor emeritus of obstetrics, University of Nebraska College of Medicine; past president of the Omaha-Douglas County Medical Society; formerly member of the state board of health; aged 83; died, October 23, of uremia.

Joseph Calvin Reifsnyder ✠ Scranton, Pa.; Jefferson Medical College of Philadelphia, 1888; veteran of the Spanish-American War; past president of the Lackawanna County Medical Society and the Pennsylvania Public Health Association; county medical director; on the staff of the Lackawanna County Tuberculosis Hospital; aged 62; died, October 23, of heart disease.

Charles Evart Paddock ✠ Chicago; Chicago Medical College, 1891; formerly assistant professor of obstetrics, Rush Medical College, and professor of obstetrics, American Medical Missionary College; member of the American College of Surgeons; aged 71; on the staff of St. Luke's Hospital, where he died, November 1, of heart disease.

Christopher J. Woolway, Duluth, Minn.; McGill University Faculty of Medicine, Montreal, Que., Canada, 1875; formerly superintendent of the St. Louis County Almshouse and Tuberculosis Pavilion, and the Deerwood (Minn.) Sanatorium; aged 76; died, October 28, in a local hospital, of angina pectoris, chronic endocarditis and gastritis.

Joseph Seal Neff, Narberth, Pa.; Jefferson Medical College of Philadelphia, 1875; director of the department of public health and charities, 1907-1914; attending physician to the Philadelphia General Hospital, 1882-1889; director of the Jefferson Medical College Hospital, 1893-1907; aged 76; died, November 4, of heart disease.

James Alexander Anderson, Smiths Falls, Ont., Canada; Trinity Medical College, 1903; served during the World War; formerly member and chairman of the board of education, member of the board of health and mayor of Smiths Falls; on the staffs of the Public and St. Francis hospitals; aged 60; died, August 4, in Toronto.

Mary Vincent O'Callaghan, Worcester, Mass.; Woman's Medical College of Pennsylvania, Philadelphia, 1885; member of the Massachusetts Medical Society; on the staff of St. Vincent Hospital; aged 78; died, October 28, in the City Hospital, of injuries received when she was struck by an automobile.

William Ford Blake, San Francisco; Cooper Medical College, San Francisco, 1903; member of the California Medical Association, the American Academy of Ophthalmology and Oto-Laryngology and the American College of Surgeons; aged 57; died, August 28, in Palo Alto, of chronic nephritis.

Robert W. Stewart, New York; Medical College of Ohio, Cincinnati, 1882; at one time professor of clinical obstetrics, Miami Medical College, Cincinnati; formerly on the staff of the Jewish Hospital, Cincinnati; aged 76; died, November 1, of arteriosclerosis and acute dilatation of the heart.

Charles Bledsoe Crute, Farmville, Va.; University of the South Medical Department, Sewanee, 1903; member of the Medical Society of Virginia; served during the World War; aged 50; died, October 9, in the Memorial Hospital, Richmond, of injuries received in an automobile accident.

John Alfred Jackson, Los Angeles; Trinity Medical College, Toronto, Ont., Canada, 1897; member of the California Medical Association, and the Associated Anesthetists of the United States and Canada; on the staff of the Los Angeles County Hospital; aged 62; died, August 26.

James Lawrence Maupin, Fresno, Calif.; St. Louis College of Physicians and Surgeons, 1890; member of the California Medical Association, and the State Board of Medical Examiners; on the staff of the Burnett Sanitarium; aged 62; died, October 1, of cerebral hemorrhage.

Allen Mason King, Jacksonville, Ill.; Barnes Medical College, St. Louis, 1902; member of the Illinois State Medical Society; served during the World War; aged 54; on the staff of the Passavant Memorial Hospital, where he died, September 21, of pneumonia.

John Henry Coughlin ✠ New York; Medical Department of the University of the City of New York, 1889; formerly clinical professor of medicine, Fordham University School of Medicine; on the staff of the Gouvernour Hospital; aged 76; died, October 19, in Atlantic City, N. J.

Philip Patrick Moore, Gloucester, Mass.; Harvard University Medical School, Boston, 1899; member of the Massachusetts Medical Society; formerly city physician, school physician and chairman of the board of health; aged 65; died, in October.

Arthur E. Prince ✠ Springfield, Ill.; Medical Department of the University of the City of New York, 1877; medical superintendent of the David Prince Sanitarium; aged 76; died, October 21, of pulmonary carcinoma and acute parenchymatous nephritis.

Frank V. Winstead, Dixon, Ky.; University of Louisville School of Medicine, 1892; member of the Kentucky State Medical Association; aged 62; died, October 12, in the Walker Hospital, Evansville, of injuries received in an automobile accident.

David Currie Ross, San Diego, Calif.; Dallas (Texas) Medical College, 1903; Chicago Hospital College of Medicine, 1914; aged 57; died, September 3, of pneumonia and traumatic pyemia, as the result of injuries received in an automobile accident.

Samuel J. Hunkin ✠ San Francisco; University of California Medical School, 1890; at one time professor of orthopedic surgery, Oakland College of Medicine and Surgery; formerly on the staff of the Children's Hospital; aged 66; died, October 11.

William Amos Mansfield, Barberton, Ohio; Cleveland University of Medicine and Surgery, 1895; health officer; on the staff of the Citizens Hospital; aged 71; was found dead, November 1, in his garage, of carbon monoxide poisoning.

George Dalton Grimes, Houston, Texas; Jefferson Medical College of Philadelphia, 1902; member of the State Medical Association of Texas; aged 52; died, July 29, in St. Joseph's Hospital, of streptococcic meningitis.

Charles Lee Blanks, Tulsa, Okla.; Beaumont Hospital Medical College, St. Louis, 1892; member of the Oklahoma State Medical Association; aged 62; died suddenly, August 4, near Elvins, Mo., of heart disease.

Samuel Henry Hairston ✠ Meridian, Miss.; Louisville (Ky.) Medical College, 1904; member of the American College of Surgeons; aged 50; died, October 20, in the Meridian Sanitarium, of coronary thrombosis.

Robert Randolph Grant ✠ Plaquemine, La.; Medical Department of the University of the City of New York, 1891; president of the Iberville Parish Medical Society; aged 64; died, October 9, of pneumonia.

Orlando B. Longenecker, Dayton, Ohio; Hospital College of Medicine, Louisville, 1884; aged 71; died, October 28, of glandular hyperplasia of the prostate gland, acute urinary retention and paralytic ileus.

John Frederick Escher, San Diego, Calif.; Kentucky School of Medicine, Louisville, 1878; aged 86; died, September 18, of chronic nephritis, arteriosclerosis, senile dementia and valvular heart disease.

James A. Summerlin ✠ Pelham, Ga.; Gate City Medical College, Texarkana, Texas, 1907; past president of the Colquitt County Medical Society; aged 52; died, October 7, of cerebral hemorrhage.

William Grant Casenburg, Knoxville, Tenn.; Tennessee Medical College, Knoxville, 1897; member of the Tennessee State Medical Association; aged 57; died suddenly, October 18, of heart disease.

Emmett James Howell, Eureka, Utah; Rush Medical College, Chicago, 1905; aged 55; died, June 6, in St. Mark's Hospital, Salt Lake City, of pulmonary tuberculosis and tuberculous spondylitis.

George G. Leist, Circleville, Ohio; Medical College of Ohio, Cincinnati, 1891; member of the Ohio State Medical Association; aged 74; died, September 10, of intestinal obstruction.

Abraham Bassman ⊕ St. Louis; National University of Arts and Sciences Medical Department, St. Louis, 1914; aged 50; died, September 16, in the Jewish Hospital, of bronchopneumonia.

Frank Albert Decker, Reardan, Wash.; College of Physicians and Surgeons, Keokuk, Iowa, 1919; served during the World War; aged 34; was killed, October 2, in an automobile accident.

Manuel Justo, Welch, W. Va.; Johns Hopkins University School of Medicine, Baltimore, 1923; aged 36; died, October 20, in St. Luke's Hospital, Bluefield, of carcinoma of the lung.

Charles Samuel Sakowitz, New Haven, Conn.; Yale University School of Medicine, New Haven, 1928; aged 25; died, October 7, in Saranac Lake, N. Y., of pulmonary tuberculosis.

Clara Eugenia Finney ⊕ Modesto, Calif.; Stanford University School of Medicine, San Francisco, 1920; aged 45; died, August 17, of skull fracture received in an automobile accident.

Jerome Augusta Boarman, Kansas City, Mo.; University Medical College of Kansas City, 1896; aged 69; died, September 12, in St. Joseph's Hospital, of carcinoma of the esophagus.

James Franklin Forehand, Bardwell, Texas; Memphis (Tenn.) Hospital Medical College, 1901; aged 75; died, September 23, of carcinoma of the left cheek and of pneumonia.

Robert Wilson Selby ⊕ Dover, Pa.; University of Michigan Medical School, Ann Arbor, 1913; aged 45; died, October 15, in the Johnston-Willis Hospital, Richmond, of septicemia.

John Frederick Miller, Andover, S. D.; University of Illinois College of Medicine, Chicago, 1905; aged 53; died, November 11, in the Peabody Hospital, Webster, of pneumonia.

Albert George Wright ⊕ Fenton, Mich.; Detroit College of Medicine, 1896; member of the school board; aged 65; died, October 14, in the Hurley Hospital, Flint, of pneumonia.

Elbridge Albert McIntyre, Chicago; University of Illinois College of Medicine, Chicago, 1927; aged 28; was found dead, November 7, in Mendota, Ill., of a gunshot wound.

Freeman A. Jones, Lansing, Mich.; Michigan College of Medicine, Detroit, 1881; member of the Michigan State Medical Society; aged 74; died, October 3, of diabetes mellitus.

John C. Thomasson, Georgetown, Ky.; Pulte Medical College, Cincinnati, 1889; for twelve years member of the school board; aged 73; died, October 4, of chronic nephritis.

William Alexander Hamilton, Paullina, Iowa; State University of Iowa College of Homeopathic Medicine, Iowa City, 1900; aged 58; died, October 11, of heart disease.

Mattie Estella Cox, Rosemead, Calif.; Hahnemann Medical College and Hospital, Chicago, 1903; aged 68; died suddenly, recently, in Franklin, Ind., of heart disease.

Robert Smith Burket ⊕ Denver; University of Colorado School of Medicine, Denver, 1913; aged 41; died, recently, in St. Joseph's Hospital, of pulmonary tuberculosis.

Albert Griffith Eyestone ⊕ Gibsonburg, Ohio; Baltimore Medical College, 1900; served during the World War; aged 60; died suddenly, October 10, of heart disease.

William MacDonald Adams, Toronto, Ont., Canada; University of Western Ontario Medical School, London, 1912; aged 54; died recently, in St. Joseph's Hospital.

Robert B. Hiller, Thebes, Ill.; St. Louis College of Physicians and Surgeons, 1893; member of the Illinois State Medical Society; aged 69; died, October 4, of senility.

Eloy V. Pineda ⊕ Manila, P. I.; University of the Philippines College of Medicine, Manila, 1920; on the staff of the San Lazaro Hospital; aged 35; died, July 11.

William Henry Bates, Brooklyn; Medical Department of the University of the City of New York, 1863; aged 88; died, October 19, of carcinoma of the esophagus.

Guy Edward Krolick, Chicago; Chicago College of Medicine and Surgery, 1913; served during the World War; aged 41; died, November 9, of heart disease.

William Thomas Hamilton ⊕ Philadelphia; Jefferson Medical College of Philadelphia, 1887; aged 66; died, October 15, of myocarditis and chronic nephritis.

Henry Bergstein, San Francisco; Medical College of the Pacific, San Francisco, 1872; aged 83; died, August 10, of coronary sclerosis and chronic myocarditis.

John A. Lyng ⊕ Minneapolis; University of Minnesota College of Medicine and Surgery, Minneapolis, 1890; aged 64; died, September 27, of coronary sclerosis.

Edwin William Eberlein ⊕ St. Louis; Medical Department of Washington University, St. Louis, 1899; aged 54; died, November 1, of chronic myocarditis.

Charles Albert Cantrell ⊕ Plainview, Texas; Barnes Medical College, St. Louis, 1900; aged 57; died, August 6, in a local hospital, of cerebral hemorrhage.

James Byars, Austin, Texas; Medical College of Ohio, Cincinnati, 1882; Confederate veteran; aged 83; died, September 15, of a self inflicted bullet wound.

W. M. Curtis, Calhoun, Ga.; Atlanta Medical College, 1875; Confederate veteran; formerly a druggist; aged 84; died, September 30, of bronchopneumonia.

Adelheim Bernhard ⊕ Milwaukee; Kaiser-Wilhelms Universtität, Strassburg, Alsace-Lorraine, Germany, 1886; aged 69; died, October 17, of heart disease.

John B. McMackin, Iron City, Tenn.; Vanderbilt University School of Medicine, Nashville, 1890; aged 68; died, October 17, of cerebral hemorrhage.

Frederick Forbes Smith, Granville Ferry, N. S., Canada; Jefferson Medical College of Philadelphia, 1895; aged 63; died, July 17, of cerebral hemorrhage.

John Benton S. Egee, Philadelphia; Hahnemann Medical College of Philadelphia, 1875; aged 75; died, October 29, of portal cirrhosis of the liver.

Garrett Van Zandt, Chicago; Rush Medical College, Chicago, 1883; aged 73; died, October 24, of carcinoma of the lower lip and myocarditis.

Clara E. Jeter, Indianapolis; Beach Medical Institute, Indianapolis, 1886; aged 75; died, October 28, as the result of an injury received in a fall.

Jesse Cameron Pickett ⊕ San Francisco; Cooper Medical College, San Francisco, 1907; aged 51; died, October 6, in Ross, of rupture of the aorta.

Joseph Anthony Ebel ⊕ St. Louis; St. Louis University School of Medicine, 1920; aged 34; died, October 30, of chronic interstitial nephritis.

George Septimus Rennie, Hamilton, Ont., Canada; Trinity Medical College, Toronto, 1889; chief coroner; died, October 13, of pneumonia.

George Norman Powell, Letohatchee, Ala.; Medical College of Alabama, Mobile, 1896; aged 67; died, October 9, of arteriosclerosis.

John Nathaniel Fain, Greenville, Texas; Vanderbilt University School of Medicine, Nashville, 1891; aged 62; died, September 21.

Saunders James Thompson, Oklahoma City, Okla.; Meharry Medical College, Nashville, Tenn., 1916; aged 36; died, June 23.

Mack M. Colley, Memphis, Tenn.; Meharry Medical College, Nashville, Tenn., 1908; aged 54; died, July 13, of heat prostration.

Michael H. Houseworth, Mason, Ohio; Miami Medical College, Cincinnati, 1878; aged 73; died, October 23, of pneumonia.

John Dixon Webster, Toronto, Ont., Canada; University of Toronto Faculty of Medicine, 1898; aged 73; died, August 11.

Lester E. Walker, Norwich, Conn.; New York Homeopathic Medical College, 1898; aged 57; died, June 14, of acute nephritis.

George W. Stewart, Muskogee, Okla.; Memphis (Tenn.) Hospital Medical College, 1890; aged 74; died, October 4, of hepatitis.

Albert Rogers, Seabeck, Wash.; Starling Medical College, Columbus, 1895; aged 63; died, August 4, of retroperitoneal sarcoma.

Webb J. Kelly, Piqua, Ohio; Bellevue Hospital Medical College, 1880; aged 73; died, September 21, of chronic nephritis.

Louis M. Coleman, Lake Charles, La. (licensed, Louisiana, 1896); aged 63; died, October 17, of nephritis.

C. T. Barker, Gate City, Va. (licensed, Virginia, by exemption); aged 77; died, October 6, of nephritis.

Bureau of Investigation

SOME MISCELLANEOUS "SPECIALISTS"

How Some Physicians Appraise the Intelligence of Other Physicians and the Public

The three schemes about to be described are being worked, at the present time, on the profession and the public, respectively. Each is operated by a physician:

Dr. F. J. James, Paris, Ill.—This man is circularizing physicians. He states in his circular-letter that he has been in the general practice of medicine for twenty years and has developed three outstanding prescriptions, which he describes as follows:

"*No. 1.—Treatment for Renal Dropsy.* This prescription will cure 75 per cent of the cases, will remove the edema, and will restore the kidney to normal function and in my experience has cured 98 per cent of all cases coming to my attention, either acute or chronic. It is also very effective in Cardiac Dropsy.

"*No. 2.—Acid Stomach and Fermentation.* This prescription will relieve the condition after the third dose. The coat will leave the tongue which the physic does not get rid of. This is not a soda preparation and one gallon can be made in your office at a cost not to exceed twenty cents. My experience has been that it will absolutely take care of 95 per cent of all stomach cases.

"*No. 3.—An Absolute Specific for Acne.* You no doubt have had experience with this disease and have found how stubborn it is to handle. I absolutely guarantee this prescription to take care of it, 100 per cent."

Dr. James then states that it is not his desire to commercialize these prescriptions, but he feels that it is his duty to impart the information to his "brother physicians." Those who are interested in having them, should mail him a check for $3 and he will send the prescriptions, with instructions for their application. Dr. James adds, as an afterthought, that the prescription for "Acid Stomach and Fermentation" has in itself, for several years, paid all of his office expenses! Those who send the $3 get the following prescriptions:

"Spirit of Juniper	min.	45
"Vinegar Squill	min.	45
"Potassium Acetate	gr.	41
"Infusion Digitalis	min.	300
"Apocynum (Lloyds)	min.	16"

This is the combination that, according to Dr. James, has cured 98 per cent of all cases of renal dropsy, acute or chronic, that have come to his attention!

"Prescription No. 2" has at least the virtue of not being a polypharmacal monstrosity. It is nothing more marvelous than six ounces of pure hydrochloric acid in one gallon of distilled water, with some "red vegetable coloring to improve appearance." This is the prescription that has paid the doctor's office expenses for several years!

"Prescription No. 3," the "Absolute Specific for Acne," is:

"Acidi Salicylic	gr.	5
"Resorcin	gr.	10
"Phenol (90 per cent)	min.	20
"Sulphuris	dr.	1
"Zinci Oxidi	dr.	2
"Ungt. Aquae Rosae Qs.	oz.	2

"M. Ft. Ungt."

Dr. John W. Nelson, Jamestown, N. Y.—This man circularizes laymen in various parts of the country under the name, "A. E. Daley," from Post-office Box 804, Jamestown, N. Y. The "come-on" circular states that "A. E. Daley" is the fictitious name adopted by a physician in good standing in the American Medical Association and in the state, county, and local medical societies! He admits that the business is "possibly not strictly professional." The general tenor of the circular is to the effect that men who cannot perform sexually to the satisfaction of themselves and their wives should write to "Daley" for special information, which would then be sent. The recipient is told that after receiving this information, he is expected to send "Daley" $10.

Those who write to "Daley" receive another printed circular and a small rubber band, such as is purchasable in any stationery shop. The instructions are to put the band twice around the penis as high as possible, just before intercourse! The second circular also states that as soon as "A. E. Daley" receives the $10, he will reveal "some facts of great importance" that he has found from an "intensive study of the anatomy and function of our sexual organ." Those that send the $10 get a mimeographed sheet of four short paragraphs, conveying no information that is not the public property of every individual who has reached maturity.

Dr. B. J. Cline, Poplar Bluff, Mo.—This is another physician who has prescriptions to sell. His price, also, is $3, but he gives twice as many prescriptions for the money as does Dr. James. Dr. Cline's first prescription is described as one that "absolutely controls Whooping Cough almost 100 per cent and very cheap to make." He also throws in an "injection treatment" for the same disease. His second prescription is for acute or chronic poison ivy inflammation. This, he assures us, cures in 99 per cent of the cases and only costs 25 cents a gallon to make! Prescription No. 3 is for sciatica and is also "good for any kind of neuralgia"; this, too, is inexpensive. The fourth prescription is an enema for the treatment of pneumonia; prescription No. 5 is for hay fever and while Dr. Cline does not claim that this permanently cures, he asserts that it will absolutely control the disease through its season, which most hay fever sufferers would doubtless consider as good as a cure. The sixth and last prescription is for venereal warts, and said to be a caustic salve that is "very easy to make and very cheap."

Dr. Cline, unlike Dr. James, makes no claims to originality in these prescriptions; he admits they are not original with him. He states that through a large company, he has access, indirectly, to every medical journal published in the world, "which costs me a nice sum, and I am giving you the best gleanings up to the minute." It appears, also, from the material that Dr. Cline sends out, that he has, in addition to these six prescriptions, a "patent medicine"—"B-J-C Capsules" of the Cline Medicine Company, Poplar Bluff, Mo. The capsules are said to contain sandalwood oil, copaiba, haarlem oil, and 2½ grains of salol.

Such incidents as these just detailed do not redound to the credit of the medical profession. It is especially disheartening, from the standpoint of scientific medicine, that there should be a sufficient number of physicians to make it a profitable thing for Drs. James and Cline to offer to sell prescriptions to men who are already graduates of medical schools and engaged in the practice of medicine.

As to the scheme exploited by Dr. John W. Nelson of Jamestown, N. Y., it is repugnant alike to the ideals of business and of medicine!

Correspondence

EDUCATION OF THE DIABETIC PATIENT

To the Editor:—Two thousand questionnaires were recently sent out for me at my request by the Chicago Dietetic Supply Company to its patrons. Five hundred similar ones were sent to names of diabetic patients of no known connections. Practically all were in communities smaller than a hundred thousand, and rural localities were given preference.

About 12 per cent of replies were received, but it should be realized that, as often happens, this is a selective and not a representative minority, they being mostly those proud of their diabetic doings that reply at all. Comparisons are admissible between members of the reporting group, but inferences may not be drawn as to the diabetic population at large.

For instance, 70 per cent of those replying use insulin, although it is most unlikely that even 15 per cent of the assumed million in the United States are using insulin. But it is significant as to what the lone practitioner is doing, single handed, that, of these 70 per cent using insulin, 76 per cent learned at home, never having been at a clinic, yet with exactly one patient reporting results less than "good."

It should be noted that 85 per cent of these insulin patients have been on a quantitative diet, which figures certainly do not apply to insulin users in general, but which do somewhat explain the uniformly good results in this group.

Clinic-training shows its value, 83 per cent of clinic-trained patients remaining sugar-free, as against 58 per cent of home-trained.

Of those replying to why more patients are not receiving modern treatment, 70 per cent blame "ignorance," not specifying whose; 60 per cent—unflattering as it may be—blame the incompetence or, more often, the indifference of available physicians, many naming all three factors. Forty-five per cent arraign the expense, especially the cost of insulin. Thirty per cent fear that insulin is habit-forming; 23 per cent fear reactions, though only 11 per cent fear the needle. Eighteen per cent have tried advertised "cures," mostly with zero results, though a few fondly think they "help some."

The value of diabetic manuals is strikingly shown; 70 per cent of book-owners are keeping sugar-free, as against 38 per cent of the bookless; and yet, 41 per cent of these people have never been advised to get a book and 16 per cent have not even seen one. Owners of the divers manuals represented are almost unanimous in the verdict that the books help.

A feeling exists among practitioners, abetted by a few specialists, that diabetic treatment is a specialty, not lightly to be trifled with by the humble family doctor, as he is liable to do more harm than good. To get current opinion, sixty questionnaires were sent out to eminent internists. Fifty-four replies were received, and 90 per cent agree. They concur that it is practicable for even the small-town doctor to treat diabetes, but not without the home-testing of urine, or without the patient having a book. They regard routine use of insulin without a quantitative diet or without keeping sugar-free as liable to prove eventually disastrous.

Many of these internists also filled in patient's questionnaires in a manner representative of the typical diabetic patient in their communities. Unanimity here is also of unusual degree. They state that in 1930 the average diabetic patient is not under treatment but has dabbled with "cures"; his urine is not home-tested but always shows sugar. Though not afraid of the needle, he has never used insulin, for he feels that when he once starts that, he is about done for! He has never been on a weighed or measured diet, nor has he ever seen or been advised to get any of the diabetic manuals. He would like elementary diabetic instruction classes held near him.

DON H. DUFFIE, M.D., Central Lake, Mich.

PRIORITY IN TREATMENT OF BROMIDE INTOXICATION

To the Editor:—In THE JOURNAL, October 25, Weidman under this title gives credit to Wile and his co-workers for being the pioneers in the application of the biologic fact that the administration of chlorides hastens the elimination of bromides.

Permit me to draw your attention to the fact that prior to or at least simultaneously with Wile, I recommended the salt treatment for bromism. At the annual meeting of the American Dermatological Association in Washington in 1922 I stated (*Arch. Dermat. & Syph.* **6**:559 [Nov.] 1922) in a discussion of a paper on drug eruptions: "The facts mentioned by Dr. Wile, that chlorides replace the bromides in the body, has induced me for many years to give patients with bromide eruption either a diet rich in salt or to administer calcium chloride by mouth." Dr. Wile in closing the discussion on his paper on bromide exanthems answered (p. 563): "Dr. Goldenberg's discussion brings out a therapeutic suggestion of great value which we have had occasion to employ, and which is very instructive. He said he had been accustomed to give patients with a bromide rash sodium chloride. . . ."

Whoever was the originator of this mode of treatment, I do not know. I do not claim any originality or priority. I have adopted it from the late Dr. Julius Rudisch, with whom I frequently discussed the topic during our rounds at Mount Sinai Hospital, and I believe it is not more than fair that our names should be included in mentioning the authors of the salt treatment in bromism.

HERMANN GOLDENBERG, M.D., New York.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

SCARLET FEVER IN THE NEGRO

To the Editor:—I have a patient, a Negro boy, aged 14, with a temperature of 100, sore throat, headache and itching skin. I suspect scarlet fever since there is some around here. How does one tell when a Negro has scarlet fever when the skin is so dark the scarlet rash cannot be seen?

R. E. GRAY, M.D., Eldora, Iowa.

ANSWER.—As a rule, it is not true that scarlet fever rashes cannot be seen in Negro patients. On the contrary, the rash can usually be seen without difficulty. Its color will vary from the usual one of scarlet fever in light patients to an increasingly bluish tint in the darker skins. In quite dark skins the compression of the skin with a glass slide is an aid in dispelling the hyperemia and in bringing out the contrast of rash with normal skin color.

In addition to the rash the usual symptoms of diagnostic value in others apply equally well to the Negro.

Sore throat, accompanied by nausea and vomiting, is always suggestive of scarlet fever.

When there is a question of scarlet fever in either Negro or white patients a culture on blood agar plates which is negative for hemolytic streptococci is of value in excluding scarlet fever, and if the absence of hemolytic streptococci is persistent one may be sure that the disease is not scarlet fever.

Of course, if the atrium is a wound as in surgical scarlet fever or the uterus as in puerperal scarlet fever the cultures must be taken from the wound or uterus as well as from the throat. As a rule there is little more difficulty in the diagnosis of scarlet fever in Negroes than in white people and the same diagnostic points apply.

POSTPUERPERAL ENDOCARDITIS — DISULPHAMIN

To the Editor:—I will appreciate any help on the following: 1. A patient, aged 25, was delivered prematurely by midforceps. At 11, she had a severe rheumatic fever leaving her with a mitral stenosis and aortic regurgitation. One vaginal examination under aseptic technic was done in her home. Feces were encountered during the delivery. An unexplained pyrexia, not typical of a puerperal septicemia, was finally found to be caused by a positive blood culture, which showed anhemolytic streptococcus, *Staphylococcus aureus* and colon bacillus. It is now almost eight weeks since the delivery and the patient still has a similar chart and seems to be failing gradually. Do you believe this to be a flare-up of her old illness or possibly infection introduced at time of delivery? What would be your course of treatment in view of cardiac complications? 2. Have you any data on the value of disulphamin (American Bio-Chemical Laboratory) as a streptococcocide? Would you classify this case as one of puerperal septicemia or a bacterial endocarditis? Please omit name.

M.D., Massachusetts.

ANSWER.—1. Regardless of whether or not bacterial endocarditis is present now, this condition at first was most likely an exogenous puerperal infection. It is difficult to prove that the entire picture is due to a flare-up of old valvular lesions. The colon bacillus and *Staphylococcus aureus* are nearly always introduced from the outside at the time of delivery. The cardiac complication does not call for a radical change in the usual treatment for puerperal sepsis. Thus far, no specific drugs have been found for this condition, so measures must be used to build up the patient's resistance. These include forcing nourishing food, ample fluids by mouth, rectum and subcutaneously, fresh air, sunlight, sedatives for pain, hypnotics to secure sufficient sleep and rest, tonics, isolation, care of the bowels and bladder, and also proper moral support. Small and repeated blood transfusions are frequently helpful and, in the case cited, digitalis is surely indicated. Antistreptococcus serums and vaccines are usually without value and are sometimes harmful. Occasionally they have apparently produced a cure. Nursing should, of course, not be permitted. From time to time an

examination should be made to rule out some surgical complication, such as an abscess, which may arise. The case cited should be classified as one of puerperal septicemia.

2. According to an advertising circular received in March, 1929, Disulphamin is chemically "Amino-Orto-Benzoil-di-Sulfo-Nucleo-Formin-Sodium Bicamforated." According to a circular received in August, 1929, it is chemically "orto-oxibenzoyl-sulphon-nucleino-formol-sodium-tetradimethylamino-antipyrin-bicamphorated." These designations are meaningless to chemists. They resemble other instances of pseudoscientific terminology wherein names of a chemical group, appearing as part of the name of this or that ingredient, are strung along to form an impressive sounding designation. While such imposingly named products have impressed many a medical man, they have usually turned out to be just a mixture of previously known substances. Good evidence should be supplied to show that one or the other designation applies to the product marketed as Disulphamin before this product is given serious consideration by physicians.

The American Bio-Chemical Laboratories, Inc., have not requested an examination of Disulphamin by the Council on Pharmacy and Chemistry nor has the Council given consideration to such a product. The American Bio-Chemical Laboratories have been sending advertising for "Disulphamin" to state medical journals with an inquiry regarding the cost of advertising and this letter is signed by Dr. L. Tomarkin. For some time the Tomarkin Foundation, Inc. (which had Carlos Tomarkin as president), has been exploiting a tuberculosis treatment called Catalysan Tomarkin, stated to have been developed by one Dr. Leandro W. Tomarkin.

GLANDULAR THERAPY OF OBESITY WITH IMPOTENCE

To the Editor:—Please advise me as to the care of this patient: A man, aged 38, weighing 278¾ pounds (126 Kg.), 5 feet 10 inches (178 cm.) tall, came to me, February 25. He was of a definite type of thyroid obesity. He had coarse hair and rough horny skin and was dull and sullen. The pulse was slow (50-60). He had been obese since childhood. His basal metabolism was minus 30. I gave him hygienic instructions, including a reduction diet and exercises. In addition, his medication has been desiccated thyroid (five times the strength of fresh gland) in huge doses, varying from 3 to 15 grains (0.2 to 1 Gm.) daily, depending on his reflexes, nervous irritability, tremor, heart rate and the rapidity of his loss in weight. June 22, he weighed 215 pounds (97 Kg.). I have now found the amount of thyroid which he apparently needs (i. e., from 5 to 6 grains, or 0.3 to 0.4 Gm., daily); by that I mean he does not develop signs of toxicity on this dosage, and if he gets less than this quantity he begins to gain weight rapidly. On this dosage his basal metabolism varies from minus 10 to plus 5. Since June 22, however, which is three months ago, he has held this weight varying from 210 to 220 pounds (95 to 100 Kg.). His skin is fine, the coarse horny texture has entirely disappeared, and his hair is smooth and oily (not so dry and coarse). He is more potent sexually (his wife has commented on this). Mentally, he is dissatisfied with an occupation which he has followed for eighteen years and is preparing himself for a better position. He is not dull and sullen but mentally alert. His obesity is not generalized now. Briefly, the man has lost 60 pounds (27 Kg.) during the first four months of treatment and apparently will not lose further on this type of treatment; without it, however, he begins to gain quickly. As his obesity is not generalized now, it is more of the pituitary type (i. e., his arms, legs and lower thighs, neck and face have little excess fat), but from the breasts to the middle of his thighs he is obese. According to his height, 5 feet 10 inches, I believe he would be better off weighing from 175 to 180 pounds (79 to 82 kg.). In my opinion, this man's thyroid does not secrete sufficiently and he needs medication to correct that. In addition, some other endocrine gland is not acting in harmony (probably the pituitary). If I have given you sufficient data to advise me intelligently, there are several questions I should like to ask. 1. Is it probable that this man will have to continue taking thyroid permanently? 2. Is pituitary therapy satisfactory in this type of case? Should whole gland be given or just anterior lobe? What company's products can you recommend? How is it best administered? What are the signs of overdosage in an adult? Are there any signs of overdosage or toxicity (similar or comparable) to what is found when too much thyroid is given? What dosage is safe to begin with? I am writing to you because of the unconvincing report by the man to whom I referred the patient. I have sent several patients to him since my graduation—he is a former teacher of mine and has the reputation of being an excellent endocrinologist, but the patients resent his high fees and he does not send me sufficiently illuminating reports. Kindly omit name and city, if this is published.

M.D., California.

ANSWER.—1. While it is possible that this patient ultimately may be able to leave off taking thyroid, the probability, as deduced from the careful statement of the letter, is that he will have to continue taking thyroid permanently.

2. It is quite unlikely that any type of pituitary therapy will be of value in this case. Although there are some reports in the literature, there are few carefully authenticated cases in adults who have shown any relief from pituitary. If it is to be used at all, it would seem that the best preparation is the whole pituitary extract and the dose a rather large one, 0.3 Gm. (5 grains) three times a day. Probably the only benefit from this large dose will be to the manufacturer. The probabilities are that the only way this patient will lose any more weight is by the continuation of the thyroid in association with a low caloric diet.

DERMATITIS FROM CYANIDES

To the Editor:—Would you kindly supply me with the information, if any, as regards any ill effects of a patient working in the cyanide heat treating room of an industrial plant. Is there any characteristic dermatitis resulting from whatever fumes might come from cyanide vats?

F. E. KIRSHMAN, M.D., Muncie, Ind.

ANSWER.—In case hardening and tempering, metals may be treated with cyanide baths. Usually potassium cyanide is utilized. Under the influence of heat, hydrocyanic acid fumes may be produced, particularly if the carbon dioxide content of the air is high.

In industrial heat treating rooms in which cyanide is used, both systemic poisoning and (or) dermatoses may take place.

The International Labor Office's "Occupation and Health" bulletin number 181, entitled "Cyanogen and Its Compounds," furnishes excellent descriptive material on all aspects of cyanide poisoning.

An article by Dr. Huntington Williams on cyanide poisoning (THE JOURNAL, March 1, p. 627) contains excellent descriptive material also of acute and nonfatal forms of cyanide poisoning.

Prosser White's "The Dermatergoses or Occupational Affections of the Skin" describes the characteristics of cyanide skin abnormalities.

The International Labor Office publication says, with reference to cyanide dermatitis: "Varieties of dermatitis due to cyanides are also important. In a fatal case reported by Bridge in 1923, the skin of the right arm of the victim had been removed in patches, as if it had been burned. Brownish-red coloration of the skin of the hands and forearm have also been reported; the nails in one case were almost black (Collins and Martland). In most cases only eczema or acne rosacea lesions are noted, and they are situated chiefly on the dorsal surface of the fingers and hands, on the wrist and at the elbow, and, more rarely, on the face, ears, and front or back of the neck. In its primary form the lesions occur in the form of extremely irritating papules or vesicles; scratching and consequent infection leads to secondary forms. The lesions are persistent and relapses are frequent; this dermatitis is aggravated by small wounds or by maceration of the skin, or by the removal of fat due to the use of certain solvents, as in electroplating."

PHENOBARBITAL (LUMINAL) AT PARTURITION

To the Editor:—A patient, aged 35, having one living child by a previous cesarean section, performed because of a pelvic contracture, was recently prepared for a second cesarean section three days before the estimated date of term. She was nervous and apprehensive and consequently was given 6 grains (0.4 Gm.) of phenobarbital two hours before time for the operation. No morphine or other opiates were given the patient. The usual fundal cesarean section was performed rapidly and no difficulties were encountered. The baby, when delivered, was livid and, though weakly, cried immediately. It failed to cry lustily from the start and breathed with difficulty but did not appear to have any obstruction. The child became cyanotic at intervals, and considerable frothy fluid exuded from the mouth. It was placed in an incubator and given oxygen as necessary. The child died about nine hours after delivery. It was believed to have been practically full term, as it was fairly free from vernix and the hair and nails were well developed. I could advance no logical reason why this baby should have died after receiving all forms of resuscitation and stimulation unless it could have been that the phenobarbital was responsible. Do you believe it probable or possible that the phenobarbital given the mother could have been in any way a factor in the production of death in this case?

GEORGE H. ADLER, M.D., Klamath Falls, Ore.

ANSWER.—It is hardly likely that the phenobarbital given to the patient shortly before the delivery of the baby was responsible for the death of the child. Larger doses than 6 grains (0.4 Gm.) have been given to patients in labor without any harm to their new-born children. It is unfortunate that a necropsy was not performed in this case. There are a number of reasons to explain the death of babies born even by cesarean section in which the amount of trauma is almost a minimum. A postmortem examination might have revealed a congenital anomaly that was incompatable with life. The child might have aspirated liquor amnii before it was removed from the uterus or it might have had asphyxia from some other cause. If the necropsy had failed to reveal any cause of death, then phenobarbital might be held responsible on the assumption that the child had an idiosyncrasy toward this drug.

TREATMENT OF COLITIS — USE OF RHUS ANTIGEN

To the Editor:—1. I have a patient with thyrotoxicosis and associated emaciation, myocarditis and colitis, whom it is planned to improve with rest and symptomatic treatment for eventual thyroidectomy. The only medication being used at present is small frequent doses of "bismuth" and 5 grain (0.3 Gm.) doses of barbital at bedtime. The patient has normal bowel movements for several days or a week or more which are interrupted by a paroxysm of diarrhea lasting from several hours to two days. Tincture of opium has been used to stop the diarrhea, with good success. Each attack of diarrhea is accompanied by the loss of the amount of body weight gained since the last previous attack. Would you recommend novatropine for the colitis? Kindly advise as to dosage and precautions if you think this drug could be properly used. 2. What is the present status of the treatment of ivy poisoning with Rhus antigen.

C. M. BAHNSON, M.D., Jersey City, N. J.

ANSWER.—1. A roentgen examination of the colon would be an advantage in determining whether or not the diarrhea is due to retention of material in the proximal colon. If it is, then mild laxative treatment consisting of magnesia magma or castor oil, taken regularly as long as the patient is at rest, would be more likely to succeed than the constipating therapy that is being employed at present. The preoperative use of iodine is advisable in this case, because it would temporarily lessen the hyperthyroid tendency, which, no doubt, exaggerates the colonic reactivity. Novatropine is an artificial tropeine, from which no more could be expected than from atropine. It would merely act as an antispasmodic.

2. Rhus preparations have not proved effective as a means of immunization against ivy poisoning.

ALUMINUM IN BODY NOT CUMULATIVE

To the Editor:—I noticed in *McCall's* for march, I believe, an article about aluminum not being absorbed by the body. In the article quoted in THE JOURNAL (March 31, 1928, p. 1010) it says that "the metals combine with both the white and the red cells of the blood to some extent." Will not one metal, such as aluminum, be absorbed just as quickly as any other metal, such as iron or tin, by the body so that, if one metal could poison a person, another could?

J. A. HOLTON, Woodburn, Ore.

ANSWER.—The various metals behave quite differently in the body. Aluminum is but slowly absorbed. It is rapidly eliminated from the blood, chiefly by the bowels. The bile has been found especially rich in aluminum. It is eliminated to a lesser extent by the kidney. There seems to be no tendency for it to collect in the body; and, in spite of the fact that aluminum may frequently enter the body in small amounts in various ways, cases of chronic poisoning from it have not been reported.

SCANTY MENSTRUATION

To the Editor:—A multipara, aged about 35, who is inclined to be stout and phlegmatic, is regular with the menses, but there seems to be no color in the flow (about straw color). I cannot find a pathologic change to account for this, only stoutness. What can be the cause?

G. GLENN WHITE, M.D., San Diego, Calif.

ANSWER.—Regular menstruation with scanty or watery flow is most often ascribable to debilitated general health; too frequent pregnancies may be a factor. Another relatively common cause of decreased or "thin" menses is derangement of the glands of internal secretion, notably deficiency of the thyroid gland. Determination of the basal metabolic rate should reveal the presence or absence of thyroid disturbance; if normal, special attention should be given to the maintenance of a well balanced diet, life outdoors, and avoidance of pregnancy until the return of robust health.

DANGERS IN USE OF X-RAYS

To the Editor:—We recently installed an x-ray apparatus with a separate fluoroscope and table. We do perhaps eight or ten fluoroscopic examinations a day and take a few pictures. We are not in the habit of using protective aprons or gloves and about the only bad results we have noticed to ourselves is an occasional mild dermatitis of the backs of our hands and a brittle condition of the nails, causing them to split and crack easily. What is the probable outcome to our general physical condition (blood picture), if any, if we continue as we are doing?

M.D., Michigan.

ANSWER.—Fundamentally, x-rays are dangerous and due caution must be exercised in their use. A fair test would be to darken completely the room in which the apparatus is used and to use the fluorescent screen in the different locations occupied by those in the immediate vicinity and usual positions of the operators. If the screen fluoresces in the slightest degree, it should be considered dangerous and the protection is not ample.

It is evident that the inquirer is exposed to the action of the x-rays because of the dermatitis on the back of the hands and the brittle condition of the nails. He should be more cautious, because it is by repeated exposures that serious consequences will occur. There are many possibilities of which little is known, especially those concerned with the endocrines. As to the blood degeneration, one should bear in mind a leukopenia and the development of an aplastic anemia.

BLOOD IN FECES

To the Editor:—At a staff meeting of a hospital a case of carcinoma of the rectum, complicated by a rectal fistula from which came blood that was almost black, was reported and discussed. Nothing was said as to whether or not there was a hemorrhage from the anus. In intestinal hemorrhage it is accepted, I believe, that the color of the blood is diagnostically indicative as to the location of the lesion—the darker the blood, the higher up in the gastro-intestinal tract is the lesion. If a case of carcinoma of the rectum is complicated by a rectal fistula and if from this rectal fistula comes blood that is dark, almost black, is the color of the blood due to the fact that it came from and possibly had remained a shorter or longer time in the fistula, or might it be indicative of a lesion higher up in the digestive tract in addition to the rectal carcinoma, and might the color of the blood be solely due to the digestive process while on its way to the exit? Kindly omit name and address.

M.D., Washington.

ANSWER.—The appearance of dark tarry blood in the feces is usually indicative of bleeding high up in the gastro-intestinal tract. However, altered blood is frequently found in individuals with obstructive and ulcerating lesions of the colon and this is due to the formation of iron sulphide from the action of the sulphide gases and the blood. The case here presented appears to be one of this nature in that the blood has remained in the colon for some period probably because of the partial obstruction from the rectal carcinoma and the irritation of the fistula.

CAUTERIZATION OF THE CERVIX IN CHILD WITH ENDOCERVICITIS

To the Editor:—Would you advise cauterization of the cervix in a child, aged 10 years, who has had a gonorrheal endocervicitis for fourteen months? I have used the usual remedies and mixed vaccine, but the discharge and tenderness of the uterus continues. I should be glad to have suggestions regarding the treatment of such a case.

C. W. HARPER, M.D., Chipley, Fla.

ANSWER.—There is as much indication to treat a 10 year old child who has gonorrheal endocervicitis with the electric cautery as there is to treat an older individual. The cautery should be used in this case because the other remedies have failed and also because cautery treatments usually produce a rapid amelioration of symptoms. After each cautery treatment it may be helpful to apply a 10 per cent solution of mercurochrome-220 soluble not only to the cervix but also all over the vaginal mucosa. Prolonged hot sitz baths may likewise prove beneficial. The child should be isolated as much as possible from other children, especially from younger girls, who are very susceptible to gonorrheal vaginitis.

POSSIBILITY OF POISONING FROM MERCUROCHROME ENEMAS

To the Editor:—I would like to inquire if there is any danger of mercury poisoning resulting from enemas in which 15 grains (1 Gm.) of mercurochrome is added to one pint (475 cc.) of fluid.

M.D., Minnesota.

ANSWER.—There is not much danger, even though the contemplated dose is perhaps three times as great as the dosage used intravenously and 50 per cent greater than the oral dose. If the enemas were used daily for quite a long time, there might be sufficient absorption of mercurochrome to produce mercurialism, which would probably be first evidenced by stomatitis, the appearance of which should be an indication for discontinuing this therapy.

COMPLICATIONS OF PERNICIOUS ANEMIA

To the Editor:—Kindly advise me in the following case: A man, aged 60, has had pernicious anemia for several years. He has done well on liver and liver extract except that he complains a great deal of tingling, numbness and weakness in his limbs, which I attribute to sensory disturbance from the anemia. Please suggest a treatment for this phase of the case.

J. G. BUSBY, M.D., Salisbury, N. C.

ANSWER.—The numbness and tingling described may disappear with the improvement consequent on liver therapy, but this is not always the case. There is no specific therapy for the sensory disturbances.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALABAMA: Montgomery, Jan. 12, 1931. Sec., Dr. J. N. Baker, 519 Dexter Ave., Montgomery, Ala.

ARIZONA: Phoenix, Jan. 6-7, 1931. Sec., Dr. H. P. Mills, 14 N. Central Ave., Phoenix, Ariz.

CALIFORNIA: San Francisco and Los Angeles, Dec. 10, 1930. Reciprocity examinations. Sec., Dr. C. B. Pinkham, 420 State Office Bldg., Sacramento, Calif.

COLORADO: Denver, Jan. 6, 1931. Sec., Dr. W. W. Williams, 224 State Capitol Bldg., Denver, Colo.

DELAWARE: Wilmington, Homeopathic, Dec. 16-18, 1930. Regular, Dec. 9-11, 1930. Reciprocity, Dec. 16, 1930. Sec., Dr. Harold Springer, 1013 Washington St., Wilmington, Del.

DIST. COLUMBIA: Basic Science, probably Dec. 28, 1930. Regular, Jan. 12, 1931. Washington, D. C. Sec., Dr. W. C. Fowler, District Bldg., Washington, D. C.

IOWA: Des Moines, Dec. 2-4, 1930. Dir., Mr. H. W. Grefe, Iowa Dept. of Health, Des Moines, Iowa.

KANSAS: Topeka, Dec. 9, 1930. Sec., Dr. A. S. Ross, Sabetha, Kan.

KENTUCKY: Louisville, Dec. 2, 1930. Sec., Dr. A. T. McCormack, 532 W. Main St., Louisville, Ky.

MARYLAND: Regular, Baltimore, Dec. 9-12, 1930. Sec., Dr. H. M. Fitzhugh, 1211 Cathedral St., Baltimore, Md. Homeopathic, Baltimore, Dec. 9, 1930. Sec., Dr. J. S. Garrison, 517 Old Orchard Rd., Ten Hills, Baltimore, Md.

MINNESOTA: Minneapolis, Jan. 6-7, 1931. Basic Science. Sec., Dr. E. T. Bell, 110 Anatomy Bldg., Minneapolis, Minn.

MISSISSIPPI: Jackson, Dec. 11, 1930. Reciprocity Applicants only. Sec., Dr. F. J. Underwood, Jackson, Miss.

NORTH CAROLINA: Raleigh, Dec. 1, 1930. Endorsement of Credentials. Sec., Dr. J. W. MacConnell, Davidson, N. C.

NORTH DAKOTA: Grand Forks, Jan. 6-9, 1931. Sec., Dr. G. N. Williamson, Grand Forks, N. D.

OHIO: Columbus, Dec. 1-4, 1930. Sec., Dr. H. M. Platter, 85 E. Gay St., Columbus, Ohio.

OREGON: Portland, Jan. 6-8, 1931. Sec., Dr. C. J. McCusker, 1014 Medical Dental Bldg., Portland, Ore.

PENNSYLVANIA: Philadelphia, Jan. 6-10, 1931. Supt., Mr. C. D. Koch, Harrisburgh, Pa.

RHODE ISLAND: Providence, Dec. 30-31, 1930. Dir., Mr. L. A. Round, Room 319 State Office Bldg., Providence, R. I.

UTAH: Salt Lake City, Dec. 15 and 16, 1930. Dir., Mr. S. W. Golding, 326 State Capitol Bldg., Salt Lake City, Utah.

VIRGINIA: Richmond, Dec. 9-12, 1930. Sec., Dr. J. W. Preston, 803 Medical Arts Bldg., Roanoke, Va.

WASHINGTON: Seattle, Basic Science, Jan. 8-9, 1931. Regular, Dec. 12-13, 1930. Dir., Mr. Charles Maybury, Olympia, Wash.

WISCONSIN: Milwaukee, Dec. 13, 1930. Basic Science. Sec., Prof. R. N. Bauer, 3410 Wisconsin Ave., Milwaukee, Wis. Regular, Madison, Jan. 13-15, 1931. Sec., Dr. R. E. Flynn, 315 State Bank Bldg., La Crosse, Wis.

Indiana Reciprocity Report

Dr. W. R. Davidson, secretary of the Board of Medical Registration and Examinations of Indiana, reports 12 permanent certificates and 35 temporary permits issued to physicians through reciprocity with other states from Jan. 1, 1930, to Aug. 30, 1930. The following colleges were represented:

College	PERMANENT CERTIFICATES	Year Grad.	Reciprocity with
College of Physicians and Surgeons, Los Angeles		(1918)	California
American Medical Missionary College, Chicago		(1903)	Illinois
Northwestern University Med. School		(1923) Iowa, (1928)	Minnesota
Rush Medical College		(1904) (1928) (1929)	Illinois
University of Illinois College of Medicine		(1928)	Illinois
Indiana University School of Medicine		(1917)	Louisiana
University of Minnesota Medical School		(1924)	Minnesota
Albany Medical College		(1908)	New York
Eclectic Medical College, Cincinnati		(1920)	Ohio

College	TEMPORARY PERMITS	Year Grad.	Reciprocity with
University of Georgia Medical Department		(1929)	Georgia
Chicago College of Med. and Surgery		(1910) (1913) (1915)	Illinois
Hahnemann Medical College of Chicago		(1889)	Illinois
Loyola University School of Medicine		(1927) (1928) (1930)	Illinois
Northwestern University Medical School		(1925)	Illinois
Rush Med. College		(1926) Minnesota, (1923) (1927) (1929)	Illinois
University of Illinois College of Medicine		(1901) (1929)	Illinois
State University of Iowa College of Med.		(1902) (1929-2)	Iowa
University of Louisville School of Medicine		(1929) (1925) (1929)	Ohio Kentucky
Johns Hopkins University School of Medicine		(1927)	Maryland
Detroit College of Medicine and Surgery		(1927)	Michigan
University of Michigan Medical School		(1924) (1927) (1929)	Maryland Michigan
Eclectic Medical College, Cincinnati		(1922)	Ohio
Ohio State University College of Medicine		(1924)	Ohio
University of Cincinnati College of Medicine		(1921) (1930)	Ohio
University of Pennsylvania School of Medicine		(1926)	Mississippi
Meharry Medical College		(1904)	Georgia
University of Toronto Faculty of Med.		(1921) Illinois, (1923)	Michigan
University of Budapest Faculty of Medicine		(1923)	Illinois

Book Notices

A HISTORY OF THE CALIFORNIA ACADEMY OF MEDICINE, 1870 TO 1930. By J. Marion Read. Boards. Price, $10. Pp. 186, with illustrations. San Francisco: California Academy of Medicine, 1930.

For the first twenty-one years of its existence, the California Academy of Medicine bore the title of the San Francisco Medical Benevolent Society. It was one of eighty societies, in a city numbering 150,000 people, classed as "benevolent" twenty-two years after the discovery of gold in Yerba Buena.

The biographic sketches include the presidents of the academy, beginning with Robert McMillan, a "forty-niner" who was content to practice medicine and resist the temptation of most of his fellows to go prospecting in the hills. The society seems to have been the center of some controversies, such as that over the first cesarean section performed in the state, the James King of William affair, and the seeming aspersion cast by Beverly Cole on the women of California, all of which were characterized by intense animosity, alining every physician on one side or the other.

The early practitioners of San Francisco were lured by a strong love of adventure which impelled so many to follow the trail of the "forty-niners." Dr. Samuel R. Gerry, one of three members of the first executive committee, migrated from Massachusetts to Chile and then to San Francisco, where he attended the first patient with cholera in the epidemic of 1849 and was made quarantine and health officer of the port of San Francisco. Another executive committeeman was Arthur Peronneau Hayne, who traveled from South Carolina to Paris and then to San Francisco; Robert McIntosh and Robert Kennedy Nuttall were young medicos who met in the antipodes and then started to practice in a tent in San Francisco, and assisted in the formation of the first medical society in San Francisco in 1850. To Victor Jean Fourgeaud, a member of the executive committee in 1873, belongs the honor of being one of the first of that illimitable band of California boosters. Educated in science, he used his trained powers of observation with the result that his essay "The Prospects of California" marked him as a pioneer in truthful advertising. In 1848 General Sutter sent to Fourgeaud a small ore specimen, which he tested and pronounced "pure gold," thus making the first test of metal in California. The third president of the benevolent society, Washington Ayer, was an eye witness of the first surgical operation performed under ether anesthesia at the Massachusetts General Hospital in 1846. At the fifteenth anniversary of the introduction of ether in surgery, he recounted the details of that momentous event, which was considered by Packard in his "History of Medicine of the United States" the best written account extant.

One feature of interest in the early society was the extreme heterogeneity of its membership. Mexican, Russian, Canadian, German, Irish, French and Scotch medical schools as well as a dozen in this country were represented. Native sons recently graduated from local schools joined the "forty-niners" from the four corners of the earth, but they had one thing in common—they were trained graduate physicians. When the question of licensing became acute, the San Francisco Medical Benevolent Society regarded itself as a state medical organization and proceeded to appoint the board of medical examiners for the state. In 1889, the membership of sixty-six physicians decided that, on account of the incongruity existing between the name and its function, the San Francisco Medical Benevolent Society should change its name to the California Academy of Medicine.

The academy period, 1891-1913, was marked by the building of a home which established an indebtedness of $12,500. The president in 1899 was the brilliant John F. Morse, whose fame rested on the first successful wiring of an abdominal aneurysm. Programs of this period featured such persons as R. Beverley Cole, President of the American Medical Association; William Watt Kerr, the beloved teacher, and Douglass W. Montgomery, who was president of the academy during the trying period of the financial collapse in 1898, when the society lost its home.

Programs for the years 1896 and 1897 marked the inauguration of the habit that was the forerunner of the present and only form of meeting in which addresses are given by imported speakers; they drew on medical officers in the army, navy,

public health and other federal services, and among other speakers of this era was Dr. M. J. Rosenau, who talked on "The Practical Value of Bacteriology in Quarantine Work." The history recounts the true situation with regard to the plague epidemic of 1900, concerning which the newspapers connived to keep facts under cover, prompted by short-sighted commercialism.

There was a temporary abrupt termination of the society's activities in 1906 by the earthquake and fire, which put the organization in a somewhat moribund state, lasting until the modern period of reorganization.

Under the presidency of Dr. T. C. McCleave, dinner meetings were held and the assumption of social aspects in connection with the scientific program proved popular. The secretary-treasurer's records prior to 1916 are apparently nonexistent, but in that year LeRoy Briggs installed the present system of accurately recording the minutes. The academy's activities suffered curtailment in war time, which was felt by every non-military organization. Dr. Ray Lyman Wilbur, president for 1917, spent much time in the national capital in war work, and many others were in the war service. One of the versatile men of this time, Saxton Temple Pope, was the secretary of the academy, a great surgeon whose interest in other fields prompted him to make a study of bows and arrows after meeting Ishi, the sole survivor of the Yana tribe of Indians. Pope made seventeen expeditions hunting with a bow and arrow, the last one in Africa. The volume gives a fairly complete outline of the activities of each year from 1915 to 1929. The careers of many prominent academy members are outlined in detail. Dr. A. W. Hewlett, president in 1922, became professor of medicine in Stanford University Medical School, which chair President Ray Lyman Wilbur had vacated to become president of the university. Hewlett served for six years as a member of the Council on Pharmacy and Chemistry of the American Medical Association, during which time the report of his work on "The Clinical Effects of Natural and Synthetic Sodium Salicylate" was published. A series of tables giving the program of meetings from 1915 to date are included in this history together with an analysis of attendance at meetings from 1927 to 1930 with the locations of guests and members. Appendixes include a list of officers from 1870 to 1930; membership roll as of Jan. 1, 1930, arranged by counties, and a copy of the constitution and by-laws. Numerous pictures of prominent members are included in the book. The reader is referred to a list of printed sources used by the compiler of this volume. The California Academy has made it known to the members of the profession that its chief function is to bring distinguished scientists who are making current medical history to San Francisco that its members might learn of medical advancement, yet no press notices reach laymen. California physicians will read this delightful volume with complacence, tracing the growth of a substantial and helpful organization through the vicissitudes of its formative period. Physicians of other states will find in this history corollaries of the problems of any medical group.

DIE VERÄSTELUNG DER ARTERIA RENALIS IN DER NIERE DES MENSCHEN: EINE HISTORISCH-ANATOMISCHE UNTERSUCHUNG. Von H. M. Hou-Jensen, Prosector anatomie. Paper. Pp. 140, with 59 illustrations. Berlin: Julius Springer, 1929.

The author precedes the report of his own observations with an extensive representation of the various theories regarding the structure of the kidneys, held since Galen. From the detailed description of his own investigations only a few statements can be pointed out. The length of the renal artery, which originates as a single trunk (78 per cent), is on the right side 5.2 cm., on the left 5.3 cm. It usually ramifies near the hilus, by dividing into three or four branches. Aberrant arteries can be found in one out of five kidneys. The author differentiates between a dorsal arterial trunk, which enters unramified into the hilus, and a ventral trunk, which is divided fanlike. The blood supply of each lobe is provided by at least two arteriae interlobares. One part of their branches leads exclusively to the columnae bertini (insignificant); the other branches form the arteriae arciformes above the bases of the pyramids, and branches are also sent to the columnae and to the connective tissue sheaths of the larger vessels. The cortex arteries originate mostly in trunks that come either acute-angled or right-angled out of the arteriae arciformes or out of their terminating ramifications. They always merge into the arteriae afferentes and send out only detached rami capsulares, rarely also directing thin branches to the round meshy net of capillaries. The off-branching of vessels from the vasa afferentia to the capillary net was noted in only 2 per cent of the cases. The blood supply of the medullary substance is mainly postglomerular. Direct branches from the vasa afferentia, respectively branches of the arteriae arciformes (arteriae rectae verae), the existence of which was already doubted by Lee-Brown, are rare and of no significance for the normal circulation. Arteriovenous anastomoses could not be demonstrated by the author.

OUTLINE IN OBSTETRICS FOR NURSES. By F. W. Rice, M.D., Instructor in Obstetrics, Iowa Methodist Hospital, and Broadlawns General Hospital, Des Moines, Iowa. Cloth. Price, $2. Pp. 228, with 56 illustrations. St. Louis: C. V. Mosby Company, 1930.

Just why this book was published is difficult to tell. The author says, "This outline is not intended as a textbook. It saves the time of the teacher in that he can lecture faster and need not stop to spell words. It enables the student to pay more strict attention to the lecture and not lose half of it while she writes down the other half." There are excellent books on obstetrics for nurses, especially those by De Lee and Van Blarcom. If a nurse possesses either of these two books she has no need for the present outline and if she owns only the latter she will not learn enough about obstetrics from it. The illustrations in this book consist of photographs reproduced from seven different books on obstetrics and a few crude drawings. The latter could advantageously have been replaced by more illustrations from the seven textbooks. Fifty pages are entirely blank for the use of notes. A large proportion of the space on the remaining pages is likewise empty, so that the actual printed material could have been published in a small booklet. The best part of the book is the introduction, which contains sound advice to prospective nurses.

LES VOMISSEMENTS CHEZ LE NOURRISSON: STÉNOSES PYLORIQUES ET DUODÉNALES. Par E. Lesné, et Maurice Coffin, médecin de l'Hôpital Bon-Secours. Paper. Price, 25 francs. Pp. 139. Paris: Gauthier-Villars & Cie, 1930.

The authors have presented in this brief monograph a clinical bedside description of the most common types of vomiting in the infant, including a discussion of the etiology, pathogenesis and treatment. They observe that vomiting may be either a casual episode or a persistent phenomenon demanding attention. The authors find that in the normal infant the stomach is empty three hours after feeding. Also the motor activity of the stomach varies with the type of milk ingested. Cow's milk passes through more rapidly than human milk. Radioscopic examination of the normal infant's stomach indicates an easy and rapid passage of the contents into the small intestine. The occasional episodic vomiting in an infant may be due to alimentary disturbances induced by underfeeding or overfeeding, irregular hours of feeding, vitamin deficiency, puerperal infection or breast abscess in the mother, dyspepsias, gastro-enteritis, or infectious diseases. Meningitis, encephalitis, whooping cough, tracheobronchial adenopathy, severe icterus and sepsis may also be associated with vomiting. The authors find that neuropathic children may be subject to vomiting particularly if brought up in an unsuitable environment under an emotional mother. The third chapter is devoted to grave paroxysmal types of vomiting found in such varied clinical conditions as intestinal invagination, strangulated hernia, alimentary anaphylaxis, cyclic vomiting and gastropylorospasm. Anaphylaxis to the milk is found to be the most frequent type of alimentary anaphylaxis in the infant. Next in frequency is anaphylaxis due to eggs. Small amounts of these foods in sensitized infants cause alarming symptoms and even collapse and death. The diagnosis and treatment of pylorospasm are discussed in detail. It is pointed out that in pylorospasm there is no stasis, in contrast with the condition in pyloric stenosis.

The last chapter is devoted to a discussion of pyloric and duodenal stenosis, or the types of vomiting associated with stasis. In determining the presence of gastric stasis, two methods are advocated by the authors, the passage of a stomach tube and the method of double weighing. In the latter method, measured amounts of milk are given and the infant is weighed

immediately after the last attack of vomiting. It is frequently found that the vomitus weighed more than the last meal given, thus showing the existence of a retention. The presence of a milk residue in the stomach of an infant four hours after the last feeding is presumptive evidence of mechanical obstruction. The incidence and pathology of pyloric stenosis are discussed. Two clinical types are mentioned. There is an acute type in which spasm plays little part. Of less frequent occurrence is the chronic type, in which both stenosis and spasm are present. The authors think that the presence of spasm tends to mask the diagnosis in the latter form. They attach little or no diagnostic importance to the presence or absence of a palpable pyloric tumor. As for treatment, they are decidedly in favor of surgical methods and do not advise medical treatment of pyloric stenosis. The mortality statistics of various surgeons are presented in detail and the importance of expert postoperative care is stressed. Duodenal obstruction is considered to be an important condition to differentiate from pyloric stenosis. Etiologically it is thought to be due to a developmental atresia or fetal peritonitis. Radiographic examination is said to show a dilated duodenum, and the treatment is surgical.

This monograph considers in a broad way the various phases of vomiting as it occurs in infancy and presents a clinical review which will be useful to students and practitioners.

A FRONTIER DOCTOR. By Henry F. Hoyt. With an introduction by Frank B. Kellogg. Cloth. Price, $3.50. Pp. 260, with illustrations. Boston: Houghton Mifflin Company, 1929.

The current year has seen several contributions to autobiographic works by physicians. At the present moment the book by Axel Munthe is listed among the best sellers and is recognized as one of the most romantic works available for the public interested in medical practice. The work by Dr. Hoyt is a book of a different character. Munthe has confessed that much of his book represents the borderland between truth and fiction. Dr. Hoyt's work is solid fact about a romantic life. He practiced medicine in Texas, New Mexico and the Far West at a time when life was a struggle. In the Spanish-American War he served in the Philippines. He earned his education as a cowboy and as a doctor in frontier districts. He knew that famous outlaw called "Billy the Kid." His life is a most interesting story and will appeal to physicians who have served in a similar territory or under similar conditions.

A SYSTEM OF BACTERIOLOGY IN RELATION TO MEDICINE. Volume I. By F. W. Andrewes, J. A. Arkwright, and others. Medical Research Council. Cloth. Price, £1 1s. 0d. net. Pp. 374, with illustrations. London: His Majesty's Stationery Office, 1930.

The previous volumes of this system have been reviewed on various occasions in THE JOURNAL. They have concerned primarily the various classifications of bacterial organisms. The present volume has an introduction by Balfour and provides not only a good history of bacteriology but chapters of general subjects in this field, including morphology, physiology, growth and reproduction, disinfection, bacterial metabolism, classifications and variations. The work is exceptionally complete. Each of the chapters is supplemented by a good bibliography. The entire series of volumes constitutes as important a reference work as is available. The illustrations, particularly in the section on history of bacteriology, are well selected and handsomely reproduced, so that the system may, as a whole, be recommended without reservation to every student of the subject and to every physician with a special interest in this field.

HIERONYMI FRACASTORII DE CONTAGIONE ET CONTAGIOSIS MORBIS ET EORUM CURATIONE, LIBRI III. Translation and notes by Wilmer Cave Wright, Ph.D., Professor of Greek in Bryn Mawr College. Cloth. Price, $4.50. Pp. 356. New York: G. P. Putnam's Sons, 1930.

The year 1930 is the four hundredth anniversary of the publication of the famous poem by Fracastorius on the subject of syphilis; hence, it is especially interesting that Professor Wright should make available, as one of the volumes on the history of medicine issued under the auspices of the Library of the New York Academy of Medicine, a new translation of this work, supplemented by an excellent introduction in which are quoted some of the most important opinions of the work that have been published from time to time throughout the world. The volume is printed with the Latin on one page and the English translation on the opposite page, so that it thus becomes available as a reference for physicians who may be attempting to brush up on the classics.

SONDERBÄNDE ZUR STRAHLENTHERAPIE. Herausgegeben von Professor Dr. Hans Meyer. Band XV: Die Röntgenbehandlung der Nervenkrankheiten. Von Prof. Dr. Otto Marburg, Vorstand des Neurol. Institutes der Wiener Universität, und Doz. Dr. Max Sgalitzer, Leiter des Röntgenlaboratoriums der I. chir. Klinik der Wiener Universität. Paper. Price, 15 marks. Pp. 213, with 4 illustrations. Berlin: Urban & Schwarzenberg, 1930.

The authors give a complete survey of the therapeutic possibilities and results of roentgen therapy in disorders of the nervous system. The basis of their report is furnished by experiences gleaned in cooperation with the surgical clinic of von Eiselsberg in Vienna. At the same time they collected and abstracted the literature pertaining to this topic and critically sifted this material. The authors profess that their main object was to outline and determine the indications for the application of this method and also to present results as far as it is possible to do so, considering that a rational roentgen therapy of nervous disorders dates back only for about ten years. In order to facilitate for the neurologist an understanding of the possibilities of roentgen therapy, in three introductory chapters the authors discuss the fundamentals of the physics of x-rays, their biologic action and the practice of therapeutic irradiation. The therapeutic chapters are divided according to the pathologic conditions to be treated. A quick orientation is facilitated by a summary attached to each chapter that concisely reports all the leading points elaborated in the text. While the authors are convinced that further observation and technical progress will furnish results above the present accomplishments, their reports reflect a sober and sound scrutinizing of results. This book may truthfully be considered a valuable guide for anybody interested in this rather new field of therapeutic endeavor.

THE MORPHINE HABIT AND ITS PAINLESS TREATMENT. By G. Laughton Scott, M.R.C.S., B.A. Cloth. Price, 5/- net. Pp. 94. London: H. K. Lewis & Company, Ltd., 1930.

The "painless treatment" consists of a modification of the Lambert-Townes treatment plus the use of phenobarbital. In the first four chapters, on introduction, etiology, symptoms of morphinism and the avoidance of shock in treatment, nothing new is given. In the fifth chapter, on special medication, the author explains that his treatment consists of the Lambert mixture with the xanthoxylum replaced by water and that the drastic purgation is also eliminated. Both of the points were first advised in 1915 by the editor of THE JOURNAL (see article on drug addictions in the "Handbook of Therapy"). The treatment consists of the withdrawal of the morphine in from seven to twelve days under a gradually developed tolerance to the belladonna and scopolamine mixture, with free and increasing doses of phenobarbital. The mixture is started with 5 minims (0.3 cm.) hourly and the dosage is steadily increased until a tolerance is developed in which some patients exceed an hourly dose of 1 drachm (4 cc.) without developing delirium or toxic symptoms, just below the point of delirium, where the pupils are dilated but still reaction to light is best; at the same time the morphine is reduced and phenobarbital is used as necessary for sleep and to reduce nervous symptoms. Medication ceases at night and the bowels are kept well open; but no exhausting purgation is given. The author believes that the end-results are better because the patient is spared the shocks of delirium, of merciless diarrhea and of sleepless nights. He states that it is not possible for any physician who has not had some experience in treating these cases to make a satisfactory withdrawal, however well provided he may be with instructions of actual treatments. The remaining five chapters are on withdrawal in three cases, the diary of a patient, and a short description of twenty consecutive cases treated during the past five years. Eleven of the patients were physicians, one was a dentist, five were women and three were men. There is a short chapter on convalescence, the conclusion, and an appendix consisting of twenty-four pages written by a medical morphinist who after three treatments, a scopolamine "knock-out," a Jennings (whom he accuses of being an ex-morphinist) and a modified scopolamine treatment, all failures, finds Dr. Scott's method the only reliable one. All of the references are from American medical writers.

PRINCIPLES OF BACTERIOLOGY IN FIFTEEN LESSONS. By Arthur A. Eisenberg, A.B., M.D., Director of Laboratories, Sydenham Hospital, New York City, and Mabel F. Huntly, B.S., R.N., Director of the School for Preliminary Courses in Nursing, Philadelphia. Fifth edition. Cloth. Price, $2.75. Pp. 322, with 62 illustrations. St. Louis: C. V. Mosby Company, 1930.

This book is intended for use in training schools for nurses. As is true of almost all the textbooks intended for this purpose, too much material is presented. All that can be expected of the nurse is that she absorb certain fundamental principles; she has neither the time nor the inclination to interest herself in details. The present volume could be made more valuable by the elimination of such material. In general, the point of view is up to date and the facts given are as nearly correct as is possible to expect in a brief textbook. It is refreshing to find an author who is willing to admit that bacteria cannot be classed either as plants or as animals. A few suggestions for improvements might be made. An attempt to make a distinction between saprophytic and parasitic bacteria in the body is rather a waste of time, since it is necessary, as these authors have found, immediately to withdraw any such distinction. The acid alkali titration method might have been omitted, as it has been discarded for all practical purposes. An example of unnecessary detail is found in the description of the streptococcus groups. If the nurse can be taught to distinguish hemolytic and "green-producing" types, it is all that can be expected. The discussion of anaphylaxis is somewhat misleading. It is hardly correct to say that this phenomenon "explains why some people are left more susceptible to infectious diseases after one attack than ever before." It would have been desirable to make some further reservations in regard to the tuberculin test in order to prevent the inference that this test will diagnose the disease. The discussion of water purification is too casual to be of any value. The book is to be commended for its excellent illustrations.

HANDBUCH DER NORMALEN UND PATHOLOGISCHEN PHYSIOLOGIE MIT BERÜCKSICHTIGUNG DER EXPERIMENTELLEN PHARMAKOLOGIE. Herausgegeben von A. Bethe, G. v. Bergmann, G. Embden und A. Ellinger. Band IX: Allgemeine Physiologie der Nerven und des Zentralnervensystems. (E.H. 1.2 a-c.) Bearbeitet von Ph. Broemser, E. Th. Brücke, usw., usw. Paper. Price, 78 marks. Pp. 840, with 162 illustrations. Berlin: Julius Springer, 1929.

In previous issues of THE JOURNAL since 1925, various volumes of this handbook have been reviewed as received from the publisher, some fifteen in all. The stupendous and commendable task is now nearing completion. In June, 1930, one volume (XVI) and parts of two others (XII/2 and XV/2) were still to appear in order to complete the set of seventeen volumes. It is the last word as a reference work and should be on the shelves of every biologic and medical library. The present volume deals with the general problems of the physiology of nerves and nerve centers, including such items as electrodiagnosis and therapy, metabolism of nerves, laws of stimulation, degeneration and regeneration, narcosis, local anesthesia, after-discharge, summation, inhibition, reflex time, refractory phase, comparative physiology of the nervous system of the invertebrates, and conduction in plants. Most of the chapters will hardly interest the general practitioner. Even the clinical neurologist, unless himself doing research work in this general field, would find most of the matter too academic for his clinical needs although he fully realizes the importance of the collected data in the elucidation of the mode of action of nervous tissue.

INSOMNIA: HOW TO COMBAT IT. By Joseph Collins, M.D. Cloth. Price, $1.50. Pp. 130. New York: D. Appleton & Company, 1930.

Dr. Collins, through his experience as a neurologist, is able to look at the subject of sleep from the point of view of the mechanist concerned primarily with the physiologic functions of the body and of the psychiatrist who understands the deviations of the human mind. Hence his book may be considered one of the most practical works available in its field. His method of treatment includes not only proper attention to the physical accompaniments of sleep but particularly an attempt to get at the psychologic basis of the disorder that keeps the mind constantly in turmoil and distress. The book is essentially a new presentation of material published before. It carefully avoids much of the unestablished theory of modern psychologic schools. For this reason it is probably one of the most practical guide books available for those suffering with insomnia.

Medicolegal

Preformed Sac and Trauma in Relation to Hernia

(Berlau v. Metropolitan Life Ins. Co. (Kan.), 24 S. W. (2d) 686)

The Metropolitan Life Insurance Company issued to the plaintiff a policy insuring him against the results of bodily injuries caused by violent and accidental means but providing that it was not to cover disability caused wholly or partly by disease or bodily or mental infirmity. On or about Nov. 1, 1923, while the plaintiff was attempting to move a large iron safe, using a crowbar, he slipped and the upper end of the crowbar struck his left groin with sufficient force to cause him to fall. He suffered severe pains and was forced to discontinue work. When he examined his side, shortly after the accident, he found it bruised, discolored and swollen. After remaining at home for a day or so, he apparently returned to work and remained at his place of business for several months. January 9, the swelling caused him so much pain that he consulted Dr. I. J. Wolf, who diagnosed his ailment as an inguinal hernia and suggested an operation, which was performed, January 21.

The plaintiff instituted suit to collect under his insurance policy, and from an adverse judgment in the lower court the insurance company appealed to the Kansas City Court of Appeals. The company contended, among other things, that the hernia was the result of inherent physical weakness or defects or bodily infirmity and was therefore not covered by the policy. Dr. J. Park Neal, testifying as an expert for the company, stated that in all cases of inguinal hernia, particularly in the groin region, there is a congenital underlying cause consisting of a weakness of the abdominal structures and abdominal wall and lining. In such cases, he said, the canal does not fully close as it normally should and the peritoneum sags into this opening, forming a preformed sac. He testified, further, that in his opinion the fall described in the plaintiff's evidence could not have caused a hernia. Replying to a hypothetical question he said: "The hernia had to have the preformed sac. The strain may have forced some omentum or a piece of gut into the sac; I would not consider the blow had anything to do with it." On cross-examination he testified that hernia could be caused by a blow, but the blow would have to be such as to tear the abdominal walls and muscles and in such a case the man would be immediately disabled and in bed for weeks, or be compelled to undergo an immediate operation. The plaintiff testified that he had never had any trouble with hernia before the accident and that he had been examined by physicians for the insurance company, prior to the issuance of the insurance policy, and that they had found no evidence of hernia. Dr. Wolf, testifying for the plaintiff, in answer to a hypothetical question which recited the facts relative to the alleged injury, stated that such an occurrence could cause a hernia. With the conflicting theories presented by the witnesses, the court said, it is clear that the question as to whether the alleged hernia was due to the preformed sac, or whether it was due to the strain, the slip, blow or fall, was for the jury to determine and that the court was not authorized to disturb the findings of the jury in that respect.

The insurance company urged, also, that the evidence failed to prove that the hernia was produced by accidental means within the meaning of the policy, and cited the case of *Caldwell* v. *Traveler's, etc., Co.*, 305 Mo. 619, 267 S. W. 907, 39 A. L. R. 56. In the case cited, it was alleged that a surgical operation for two hernias resulted in an obstruction of the bowels and death. The court in that case reasoned that, assuming the obstruction of the bowels and the ensuing death were the unusual and unexpected result of the operation, skilfully done at the request of the insured, *intentionally* done, the death was not the result of accidental means. The court there held that where an unusual and unexpected result occurs by reason of the doing by the insured of an intentional act, where no mischance, mishap or slip occurred in the doing of the act itself, the ensuing injury or death is not caused through accidental means. In the present case, however, the court held that the alleged accident which caused the injury was unexpected, unforeseen and lay either in the slipping of the plaintiff or his

fall against the crowbar, or both. Therefore, the court said, the ruling in the Caldwell case does not apply.

The policy provided that if an injury necessitated any surgical operation involving cutting into the abdomen for treatment of the organs therein, the sum of $100 was to be paid the plaintiff. The insurance company urged that the judgment of the lower court was excessive in that it allowed $100 for the herniotomy, contending that an operation for hernia does not require cutting into the abdomen. The court, however, overruled this contention. On condition that the plaintiff remit a certain sum, adjudged to be excess damages allowed by the lower court in computing the period during which the plaintiff was totally disabled, the appellate court affirmed the judgment of the lower court.

Wilful Betrayal of a Professional Secret

(McPheeters v. Board of Medical Examiners (Calif.), 284 P. 938)

The California Medical Practice Act provides that a license to practice medicine may be revoked for unprofessional conduct and includes in the definition of what constitutes unprofessional conduct "the wilful betraying of a professional secret." The board of medical examiners revoked McPheeters' license on the charge that he had been guilty of wilfully betraying a professional secret in that he wrote certain letters to a former office assistant in which he described operations performed on certain patients and imparted other information concerning the condition of the patients. The letters contained nothing which would in any manner tend to disgrace, embarrass or incriminate any of the patients and none of the patients made any objections whatever to the disclosures. The superior court, Fresno County, set aside the order of the board revoking the license and the board appealed to the District Court of Appeals, first district, division 1.

The phrase "wilful betrayal of professional secrets," said the court, cannot be held to apply to any and all disclosures that a physician may intentionally make. The statute is in its nature penal and is to be construed strictly in favor of an accused. By the use of the word "wilful" the legislature without doubt intended to mean an act that implied an actual and conscious infraction of duty and it would be a harsh and unreasonable construction to hold otherwise or to say that the disclosures here involved were of that character intended to be remedied by the statute. If such a construction was imperative, any disclosures, though harmless and innocently made without objection from the patients and regardless of their nature, would deprive a physician of his right to practice medicine, a right which has taken him years of study and a large expenditure of money to acquire.

Legislation of the character embraced within the general scope of the medical practice act, so far as it provides for the revocation of the certificate of a physician, can be sustained only on the ground that the legislature has authority under its general police power to provide all reasonable regulations that may necessarily affect the public health, safety and morals. The power thus conferred must be under provisions of law which are reasonable and declared with such certainty and definiteness that a physician may know exactly what they are. That the legislature did not intend the restriction to apply to all disclosures is evidenced by its use of the word "wilful." It has been held that such word means "deliberately and intentionally, and with design and purpose." *State* v. *Smith,* 199 N. W. 427, 159 Minn. 429, 511. It implies a deliberate intention, for which no reasonable excuse can be given, to do or refrain from doing some act which good faith in the performance of some duty requires or prohibits, as the case may be. It further implies that there must be some design, purpose and intent to do an injury. The word sometimes means "with a bad purpose and with the intention designedly and purposely to cause injury." So it has been held that an act, though intentional, is not wilful unless done with a wrongful purpose, or committed out of mere wantonness or lawlessness. *People* v. *Martinitis,* 168 App. Div. 446, 153 N. Y. S. 791; *Ex parte Cote,* 93 Vt. 10, 106 A. 519. It means "bad motive or purpose with the direct effect of injuring another" and involves the idea of premeditation and determination to do the act though known to be forbidden. *King* v. *Empire etc. Co.,* 148 Va. 585, 139 S. E. 478, 58 A. L. R. 193; *Gildersleeve* v. *Newton Steel Co.,* 109 Ohio St. 341, 142 N. E. 678.

The medical practice act was never designed nor intended, continued the court, to seal the lips of a physician against any and all disclosures, irrespective of their harmless character, nor was it designed to embrace facts not connected with the practice of a profession. The court affirmed, therefore, the judgment of the superior court, annulling the order of revocation made by the board of medical examiners.

Pharmacy: Care Required of Pharmacists.—For the treatment of his foxes, the purchaser ordered 100 tetrachlorethylene pills. Carbon tetrachloride pills were delivered to him instead and were administered to his foxes. As a result, eight died. In the suit that resulted, the court instructed the jury that:

> Ordinary care in reference to the business of a druggist signifies the highest practical degree of prudence, thoughtfulness, and vigilance, and the most exact and reliable safeguards consistent with the reasonable conduct of the business, in order that human and animal life may not be exposed to the danger flowing from the substitution of deadly poison for harmless medicine or more poisonous for lesser poisonous medicine.

The Supreme Court of Washington found no error in that instruction. It states the law, said the Supreme Court, in almost the same language as it is stated in *Willson* v. *Faxon, Williams and Faxon,* 208 N. Y. 108, 101 N. E. 799, 801, 47 L. R. A. (N. S.) 693, Ann. Cas. 1914D, 49, where it said:

> The negligence which must be established to render a druggist liable in such a case as this is measured by his duty; and, while this is only to exercise ordinary care, the phrase "ordinary care" in reference to the business of a druggist must be held to signify "the highest practicable degree of prudence, thoughtfulness and vigilance and the most exact and reliable safeguards consistent with the reasonable conduct of the business in order that human life may not constantly be exposed to the danger flowing from the substitution of deadly poisons for harmless medicines."

—*Martin v. Bartell Drug Co. (Wash.), 284 P. 96.*

Insurance, Accident: "Total Disability" Defined.—While there appears to be some conflict in the authorities as to what constitutes total disability within the meaning of an insurance policy providing for certain payments in case injury shall totally disable the insured, there is ample authority to be found both in the decisions and in the textbooks that in order to constitute total disability it is not necessary that the insured be absolutely helpless. An attempt by the insured to perform a few occasional, trivial acts relating to the duties of his employment, though in fact he ought not to have made such an attempt, does not deprive him of the right to show that he was totally disabled. It has been held sufficient to constitute total disability if the injuries are of a character and degree that common prudence requires the insured to desist from his labors so long as it is reasonable and necessary to effect a speedy cure.—*Sherman v. Continental Casualty Co. (Calif.), 284 P. 946.*

Insanity: Testamentary Capacity.—The word "incompetent," when used to describe a person's legal capacity to make a will, applies to any person, whether insane or not, who is by reason of old age or disease, or weakness of mind from any other cause, unable to understand what property he has, the relationship that he bears to those who would naturally be the objects of his bounty and what disposition he may be making of his property at the time. A person may be mentally incompetent to make a will and yet not be an insane person.—*In re Bielenberg's Estate (Mont.), 284 P. 546.*

Society Proceedings

COMING MEETINGS

American Society of Tropical Medicine, Cleveland, December 27-30. Dr. Edwin Peterson, U. S. Naval Hospital, Washington, D. C., Secretary.

American Student Health Association, New York City, December 29-30. Dr. D. F. Smiley, Cornell University, Ithaca, N. Y., Secretary.

Radiological Society of North America, Los Angeles, December 1-5. Dr. I. S. Trostler, 25 East Washington Street, Chicago, Secretary.

Society for the Study of Asthma and Allied Conditions, New York, December 6. Dr. Will C. Spain, 116 East 53d Street, New York, Secretary.

Society of American Bacteriologists, Boston, December 29-31. Dr. James M. Sherman, Cornell University, Ithaca, New York, Secretary.

Southern Surgical Association, Lexington, Ky., December 9-12. Dr. Robert L. Payne, 142 York Street, Norfolk, Va., Secretary.

Western Surgical Association, Kansas City, Mo., December 5-6. Dr. Frank R. Teachenor, 306 E. Twelfth St., Kansas City, Mo., Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in continental United States and Canada for a period of three days. Issues of periodicals are kept on file for a period of five years only. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending, but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Heart Journal, St. Louis

6: 1-162 (Oct.) 1930

*Syphilis of Aorta and Heart. H. S. Martland, Newark, N. J.—p. 1.
Gross Pathology of Heart in Cardiovascular Syphilis. J. G. Carr, Chicago.—p. 30.
*Microscopic Pathology of Cardiac Syphilis. C. C. Maher, Chicago.—p. 37.
*Localization of Syphilitic Virus in Aorta. J. W. McMeans, Pittsburgh.—p. 42.
Syphilitic Aortic Insufficiency: Aortic Valve Area, Myocardium and Branches of Aorta. O. Saphir and R. W. Scott, Cleveland.—p. 56.
Roentgenologic Diagnosis of Syphilitic Aortitis. D. Steel, Cleveland.—p. 59.
*Fluoroscopic Studies of Heart and Aorta in Acquired and Congenital Syphilis. C. M. Kurtz and J. A. E. Eyster, Madison, Wis.—p. 67.
Aorta: Syphilitic Aortitis. A. O. Hampton, E. F. Bland and H. B. Sprague, Boston.—p. 77.
Electrocardiogram and Teleroentgenogram in Early Syphilis. R. Ingraham and E. P. Maynard, Jr., New York.—p. 82.
*Symptoms and Clinical Course of Syphilitic Aortic Insufficiency. R. W. Scott, Cleveland.—p. 86.
Diagnosis of Cardiovascular Syphilis: Analysis of Clinical and Postmortem Findings. W. D. Reid, Boston.—p. 91.
Differentiation of Syphilitic from Functional and Other Forms of Aortic Insufficiency. L. T. Gager, Washington, D. C.—p. 107.
Course of Syphilitic Cardiovascular Disease. F. A. Willius, Rochester, Minn.—p. 113.
*Diagnosis of Syphilitic Aortitis with Negative Wassermann Reactions. S. A. Levine, Boston.—p. 116.
*Relation of Syphilis to Hypertension. E. F. Horine and M. M. Weiss, Louisville, Ky.—p. 121.
*Clinical Heart Findings in Children with Congenital Syphilis. G. Previtali, G. H. B. Nicolson and D. Moon-Adams, New York.—p. 128.
*Heart Disease in Children Due to Congenital Syphilis. T. B. Givan, New York.—p. 132.
*Congenital Syphilis as Cause of Heart Disease. H. McCulloch, St. Louis.—p. 136.
*Use of Intravenous Arsenicals in Treatment of Cardiovascular Syphilis. L. E. Hines and J. G. Carr, Chicago.—p. 142.
*Treatment of Cardiovascular Syphilis. J. E. Moore and J. H. Danglade, Baltimore.—p. 148.
*Principles Underlying Treatment of Cardiovascular Syphilis. U. J. Wile, Ann Arbor, Mich.—p. 157.

Syphilis of Aorta and Heart.—Martland feels that, from a clinical and pathologic standpoint, syphilis of the aorta and heart should be regarded as an acquired disease (congenital cases being infrequent) developing insidiously and showing symptoms years after the initial infection. It is possible to recognize clinically and to diagnose an early aortitis, an aortic regurgitation, a narrowing of the coronary ostia, an aneurysm, or any combinations of these lesions. Treatment and prognosis should be based on such recognition. The myocardium in syphilis is frequently normal. When the aortic valve is involved, the main myocardial lesion is hypertrophy. Inanition atrophy is occasionally encountered. Specific lesions of the myocardium are infrequent, and, when they occur, are so slight in extent as to be of little practical importance. It is safer and better to assume that the coronaries distal to the aortic wall are usually normal in pure, uncomplicated syphilis, and that coronary occlusions, anemic infarcts, necrosis of heart muscle, replacement fibrosis, aneurysms of ventricular walls, and fibrous myocarditis are almost entirely due to coronary injury dependent on an arteriosclerotic process and have nothing to do with syphilis. That rheumatism and other infections may also produce forms of interstitial myocarditis is obvious. But it appears that syphilis does not play an important part in the production of such lesions.

Microscopic Pathology of Cardiac Syphilis.—Five cases of uncomplicated and probably untreated aortic regurgitation were studied microscopically by Maher. The inflammatory reaction, presumably due to syphilis, by exclusion of other factors was found to be a lymphocytic and plasma cell infiltration about the coronary arteries and their branches and beneath the visceral pericardium. In the muscular tissue the invasion appeared between the fibers and can be demonstrated about the capillary walls.

Localization of Syphilitic Virus in Aorta.—McMeans believes that in syphilitic aortitis the intima is involved primarily by direct infection from the blood stream. It may also be involved from the adventitia through the vasa vasorum. Histologically, the lesions are the same. Undoubtedly, the most serious lesions produced by syphilis on the aorta and heart are the syphilitic aortic endocarditis with regurgitation and occlusion of the coronary orifices. This is intimal disease. Therefore, it would appear that syphilitic intimal disease of the aorta is more important clinically than is medial disease.

Heart and Aorta in Acquired and Congenital Syphilis.—A series of fifty-four cases of acquired and twelve cases of congenital syphilis are presented by Kurtz and Eyster, with especial reference to the fluoroscopic observations in the heart and aorta. Fluoroscopic evidence of aortitis was found in 90.7 per cent of the cases of acquired syphilis and in 36.4 per cent of the cases of congenital syphilis. Aneurysm of the aorta was found in 18.5 per cent of the cases of acquired syphilis and was absent in all the congenital cases. Cardiac enlargement was present in 38.9 per cent of the cases of acquired syphilis. In a group of twenty-three cases of acquired syphilis, exhibiting primarily central nervous system disease, 95.7 per cent showed evidence of aortic involvement, and aneurysm could be demonstrated in 21.8 per cent.

Symptoms and Course of Syphilitic Aortic Insufficiency.—Scott made postmortem clinical observations in 107 cases of syphilitic aortic insufficiency. Syphilitic involvement of the aortic orifice may appear as early as five years and as late as forty-eight years after the primary infection. The average time interval is around twenty years. Free aortic regurgitation appearing out of a clear sky in an adult with a negative cardiac history, and with no evidence of acute infection, should be regarded as syphilis until proved otherwise. Substernal pain and anginal attacks are not important symptoms in the type of cases here considered. Syphilitic aortic insufficiency is more common in the Negro than in the white person. The appearance of congestive heart failure in a patient with syphilitic aortic insufficiency is a grave omen.

Diagnosis of Syphilitic Aortitis with Negative Wassermann Reactions.—In the forty cases of syphilitic aortitis reviewed by Levine, the Wassermann reaction in the blood was negative in twelve instances. There remained four cases in which there was no history of syphilis and no evidence of either aneurysm or aortic insufficiency. Such cases might be diagnosed in life by more careful roentgenologic study and by an occasional finding of a positive Wassermann reaction only after a provocative test, combined with other clinical data that in general point to syphilis.

Relation of Syphilis to Hypertension.—A group of 666 patients with essential hypertension was studied by Horine and Weiss to determine whether syphilis was a possible etiologic factor. A control group of 2,000 nonhypertensive patients of similar ages and economic status was studied. The incidence of syphilis was practically the same in the hypertensive group as in the control group. Syphilis cannot have any etiologic bearing on essential hypertension.

Cardiac Observations in Children with Congenital Syphilis.—In contrast to the conditions found in acquired syphilis, Previtali et al. were not able to detect, by available methods of physical examination, any cardiovascular lesion in the fifty cases of congenital syphilis examined.

Heart Disease in Children Due to Congenital Syphilis.—Four hundred and seventeen patients with congenital syphilis ranging in age from 3 months to 42 years were studied by Givan with reference to heart disease being caused by *Spirochaeta pallida*. Up to the present moment not one of the cases

has shown signs or other collected data that would lead one to make a definite diagnosis of syphilitic heart disease.

Congenital Syphilis as Cause of Heart Disease.—McCulloch asserts that there is no evidence in this study that congenital syphilis contributes to the incidence of heart disease in children up to the age of 15 years. That heart disease and sudden death may follow this type of infection later in life is not made clear by this study, but it may be supposed that instances of this sequel would be about equal to those that follow other acute infections of childhood.

Intravenous Arsenicals in Treatment of Cardiovascular Syphilis.—A clinical study on the effect of neoarsphenamine on the symptoms of patients with cardiovascular syphilis is presented by Hines and Carr. Symptomatic improvement is believed to be a neoarsphenamine effect in 57 per cent of the cases. Twelve per cent showed aggravation of symptoms; probable anatomic damage was produced in three patients. No cases of sudden death or aneurysmal rupture were noted. A higher percentage of improvement is noted in patients who have syphilitic aortitis without definite aneurysm or aortic regurgitation. If the drug is cautiously administered in small doses, patients functionally classed 2 b (American Heart Association) may be benefited by the drug. Improvement in the serologic reactions of the blood does not always parallel the symptomatic improvement. Although the lives of patients with cardiovascular syphilis are perhaps prolonged by neoarsphenamine treatment, there is no evidence in any case studied which shows that the disease was permanently arrested.

Treatment of Cardiovascular Syphilis.—Moore and Danglade assert that the treatment of cardiovascular syphilis is best accomplished by a combination of such routine medical measures as rest, restriction of activities, and digitalis together with antisyphilitic treatment. An acceptable method of antisyphilitic treatment is based on the avoidance of therapeutic shock (the Herxheimer reaction) and the therapeutic paradox by starting treatment cautiously with bismuth compounds or mercury and the iodides, by the use of long courses of small doses of neoarsphenamine or bismarsen, and by the prolongation of treatment for a minimum of two years with alternation of these drugs. A study of forty-three patients with aortic aneurysm demonstrates that life may be prolonged from an average of nine months from the onset of symptoms in untreated patients, to an average of sixty-nine months in patients receiving one year or more of such treatment. A study of ninety patients with aortic regurgitation and eight with various other forms of syphilitic cardiovascular disease shows that life may be prolonged from an average of thirty-two months from the onset of symptoms in untreated patients to an average of sixty-five months in patients receiving one year or more of such treatment. These data seem to demonstrate that properly directed antisyphilitic treatment is of great value in cardiovascular syphilis.

Principles Underlying Treatment of Cardiovascular Syphilis.—Wile emphasizes the fact that the treatment of syphilitic heart disease is always a treatment of the individual patient. Such cases as are amenable to an antisyphilitic regimen respond well if not pushed too hard and if treated before decompensation has occurred or after it has been temporarily relieved. The mechanical end-results of syphilitic disease of cardiovascular nature are in no way influenced by antisyphilitic treatment. In those cases of cardiovascular syphilis in which benefit is achieved, this not only occurs because of dispersion of active processes in the affected part of the cardiovascular system but in a large measure is due to the dispersion of remote foci elsewhere in the body. Such foci in untreated cases must act as predisposing and contributory factors in the ultimate breakdown of the cardiovascular system. Fully compensated cases of cardiovascular syphilis which have a good background of early treatment are frequently cases which need not and should not be treated. Except for tryparsamide in certain selected cases of aortitis, better results are achieved by the conservative use of mercury, bismuth compounds and iodide than by the arsphenamines. These comments are not intended as dogmatic, incontrovertible statements of fact but are based entirely on personal experience.

American Journal of Physical Therapy, Chicago

7: 265-308 (Oct.) 1930

Combined Methods in Chronic Cases: Case. J. W. Torbett, Marlin, Texas.—p. 271.
Eponyms of Medical Electricity. H. Goodman, New York.—p. 274.
Physical Treatment of Fibrositis. R. G. Gordon, Bath, England. —p. 279.
Technic of Radium Therapy Today. D. C. L. Fitzwilliams, London, England.—p. 289.
Radon Seeds in Treatment of Carcinoma. H. S. Souttar, London, England.—p. 294.
The Long Look See. F. S. O'Hara, Springfield, Ill.—p. 298.
Superfluous Hair. H. Goodman, New York.—p. 302.

American Journal of Public Health, New York

20: 1055-1178 (Oct.) 1930

Training of Health Officers. J. C. Geiger, San Francisco.—p. 1055.
Home Pasteurization of Milk. L. Arnold and C. J. Gustafson, Chicago. —p. 1065.
Boulder Dam Symposium: Sanitary Engineering Aspect. L. B. Reynolds, Stanford University, Calif.—p. 1071.
Immigration Aspect. F. T. Foard, Stockton, Calif.—p. 1080.
Problems of Sanitation at Headquarters Area During Construction of Boulder Dam. H. B. Hommon, San Francisco.—p. 1086.
Milk-Borne Disease in Massachusetts, 1927-1929. G. H. Bigelow and F. C. Forsbeck, Boston.—p. 1094.
Effective and Practical Definition of Pasteurization. L. C. Frank, Washington, D. C.—p. 1105.

American Journal of Tropical Medicine, Baltimore

10: 299-377 (Sept.) 1930

*Identity of Yellow Fever Lesions in Africa and America. O. Klotz and T. H. Belt, Toronto.—p. 299.
Yellow Fever Endemicity in West Africa: Protection Tests. H. Beeuwkes, J. H. Bauer and A. F. Mahaffy, Lagos, Nigeria.—p. 305.
Pellagra: Four Cases in San Francisco. A. C. Reed, San Francisco. —p. 335.
Production of Typical Calabar Swelling in Loa Patient by Injection of Dirofilaria Antigen: Nature of Calabar Swellings. A. C. Chandler, G. Milliken and V. T. Schuhardt, Houston, Texas.—p. 345.
Problem of Eradication of Strongyloides Intestinalis. A. L. Levin, New Orleans.—p. 353.
Hookworm Infestation in Indian (Guaimi) and Non-Indian Population of Panama. L. Schapiro, New York.—p. 365.

Identity of Yellow Fever Lesions in Africa and America.—Klotz and Belt have found that the quality of the lesions arising in yellow fever in Africa is similar to that of lesions occurring in American cases. Furthermore, the incidence of various types of changes in different tissues is broadly the same, with differences only in a few reactions which may be accounted for by the technic applied. In these more careful studies, applied to a larger number of cases, they have confirmed their previous observations that the nature of the pathologic processes arising in the yellow fever of Africa is identical with that of such processes occurring in American cases. Variations that have been observed in the quality of the lesions here described are compatible with the variations that have been found in the case of different strains of virus isolated in America and in Africa.

Colorado Medicine, Denver

27: 365-412 (Oct.) 1930

Problems in Medical Economics. W. A. Kickland, Fort Collins.—p. 369.
Treatment of 500 Cases of Vincent's Disease: Review of Literature. C. O. Giese and A. L. Briskman, Colorado Springs.—p. 374.
To Ministers of Gospel of Every Denomination. T. Beddoes, Clifton, England.—p. 380.
Infant Feeding Suggestions for General Practitioner. F. P. Gengenbach, Denver.—p. 382.
Agranulocytic Angina Following Administration of Neoarsphenamine: Case with Recovery Following Use of Sodium Thiosulphate. J. M. Foster, Jr., Denver.—p. 388.
Undulant Fever: Case. L. Huelsmann, Colorado Springs.—p. 393.

Kansas Medical Society Journal, Topeka

31: 351-390 (Oct.) 1930

Acute Intestinal Obstruction. R. D. Russell, Dodge City.—p. 351.
Diagnosis of Acute Osteomyelitis. E. E. Morrison, Great Bend.—p. 354.
Clinic: "Jake" Paralysis. M. L. Perry and J. P. Kaster, Topeka.—p. 356.
Cause of "Jake" Paralysis. E. R. Millis, Kansas City.—p. 359.
Epidemiologic Investigation of Jamaica Ginger Paralysis Cases. E. G. Brown, Topeka.—p. 362.
Pyelitis. O. W. Davidson, Kansas City.—p. 365.
Head Injuries. W. D. Abbott, Des Moines, Iowa.—p. 369.
Cesarean Section: Increase in Indications: Other Methods in Delivery. J. B. Henry, Lawrence.—p. 372.
Insulin in Large Doses. H. E. Marchbanks, Pittsburg.—p. 374.

New England Journal of Medicine, Boston

203: 757-806 (Oct. 16) 1930

Fibromyomata of Uterus Complicating Pregnancy. R. S. Benner, Springfield, Mass.—p. 757.
*Value and Limitations of Spinal Anesthesia. J. B. Deaver and J. C. Eckels, Philadelphia.—p. 760.
Use of Thymophysin in Labor. M. Davis, Boston.—p. 771.
Number of Physicians Consulted by Tuberculous Patients and Reasons for Changing from One to Another. L. R. Williams and A. M. Hill, New York.—p. 782.
*Hydrochloric Acid and Diarrhea. E. S. Emery, Jr., Boston.—p. 785.
Operative Treatment of Tuberculous Arthritis. C. F. Painter, Boston. —p. 787.

Value and Limitations of Spinal Anesthesia.—A report of the results following 2,302 administrations of spinal anesthesia is submitted by Deaver and Eckels which, together with a previous report, totals 4,553 spinal anesthesias from one clinic. The advantages and disadvantages of this type of anesthesia are discussed from a clinical point of view. A technic of administration that has proved practical and efficacious is given in detail. A graphic study of the blood pressure before, during and after anesthesia is incorporated. Two fatalities are reported.

Hydrochloric Acid and Diarrhea.—Forty-seven cases are reported by Emery which failed to show free hydrochloric acid on one or more gastric analyses. Ruling out those cases in which a true achylia gastrica probably did not exist, the incidence of diarrhea in this series is too small to justify the idea that an absence of hydrochloric acid is a cause of diarrhea. This is in accord with knowledge of intestinal disturbance in pernicious anemia and with a study of the stools. It seems more probable that the achlorhydria and the diarrhea are symptoms of the same condition.

New Jersey Medical Society Journal, Orange

27: 751-824 (Oct.) 1930

Place of Physician in School Health Program. A. G. Ireland, Trenton. —p. 751.
Physician and Contribution to Education, from Viewpoint of School Administrator. F. G. Pickell, Montclair.—p. 752.
Developments of School Health Program as Seen by School Nurse. E. T. Walker, Monmouth County.—p. 755.
School Health Work from Physician's Point of View. S. Nichols, Asbury Park.—p. 758.
Contribution of Physical Education to School Health Program. F. W. Maroney, Atlantic City.—p. 761.
Jew in Medicine from Biblical to Modern Times. M. Danzis, Newark. —p. 763.
Clinical Results with New Magnesium Compound. C. M. Trippe, Asbury Park.—p. 776.
Medicolegal Aspects of Low Back Injuries. M. Kummel, Newark.— p. 785.
Recent Advances in Diagnosis and Therapy. H. I. Goldstein, Camden. —p. 788.

Northwest Medicine, Seattle

29: 443-498 (Oct.) 1930

Cystectomy with Bilateral Transplantation of Ureters in One Operation: Five Cases. R. C. Coffey, Portland, Ore.—p. 443.
*Obstetric Cases at Minneapolis General Hospital. F. L. Adair, Chicago, and M. S. Sichel, Portland, Ore.—p. 450.
America's High Maternal Mortality Rate. F. L. Wood, Lynden, Wash. —p. 456.
Treatment of Salpingitis: Bell-Beuttner Operation. A. Mathieu, Portland, Ore.—p. 460.
Manipulative Obstetrics. J. H. Sayer, Seattle.—p. 464.
Relation of Gallstones to Pregnancy: Case. R. L. Zech, Seattle.—p. 468.
Recent Advances in Infant Feeding. E. J. Barnett, Spokane, Wash.— p. 473.
*Experience with Evaporated Milk in Infant Feeding. H. C. Olmsted, Seattle.—p. 475.
Training Child to Eat. C. E. Hunt, Eugene, Ore.—p. 478.
*Infantile Tetany: Two Cases Developing Active Symptoms While Receiving Viosterol. N. W. Clein, Seattle.—p. 482.

Obstetric Cases at Minneapolis General Hospital.—A statistical survey of 7,226 obstetric cases, occurring during a five year period at the Minneapolis General Hospital, is presented by Adair and Sichel. There were 5,911 maternity cases in the series with 30 deaths, a mortality of 0.51 per cent. Puerperal sepsis was responsible for 43.3 per cent of these deaths. There were 1,272 abortion cases with 26 deaths, a mortality of 2.04 per cent. Sepsis was responsible for 84.6 per cent of these deaths. There were 46 extra-uterine pregnancies with 1 death, a mortality of 2.3 per cent. There were 5,483 recorded fetal presentations, with the occiput presenting in 96 per cent, the breech in 3.4 per cent, the face in 0.3 per cent, the brow in 0.05 per cent, and the shoulder in 0.25 per cent. Second degree perineal lacerations occurred in 8.7 per cent and third degree in 0.24 per cent of the series. Episiotomy was performed in 4.2 per cent. Forceps were applied in 3.3 per cent of the series, with a maternal mortality of 3.3 per cent and a fetal mortality of 7.5 per cent. Podalic version and extraction was performed in 0.93 per cent with a maternal mortality of 3.8 per cent and a fetal mortality of 45.3 per cent. There were twenty-six cases of placenta praevia treated, with a maternal mortality of 4 per cent and a fetal mortality of 46.1 per cent. There were twenty-nine cases of convulsive eclampsia treated, with a maternal mortality of 14 per cent and a fetal mortality of 52 per cent. The entire fetal mortality was 7.7 per cent. Of these, 2.9 per cent represented stillbirths and 4.8 per cent were neonatal deaths. By subtracting the seventeen previable stillbirths and the fifteen previable neonatal deaths, a corrected mortality rate of 2.6 per cent for the stillbirths and 4.5 per cent for the neonatal deaths is obtained, making a total corrected fetal mortality rate of 7.1 per cent.

Experience with Evaporated Milk in Infant Feeding.—Olmsted recommends the use of unsweetened evaporated milk in infant feeding because: It is entirely adequate from a nutritional standpoint when fed in conjunction with other foods and vitamins; it can be given in a concentrated state equivalent to whole cow's milk; it is easily digested; it is palatable, from the infant's standpoint; it is cheap and easily procurable. Personal experiences with this food are discussed.

Infantile Tetany.—Clein reports two cases in which active symptoms developed while viosterol was being given, for two and seven months, respectively. Both patients responded readily when the dosage was increased over that which they had been receiving.

Pennsylvania Medical Journal, Harrisburg

34: 1-70 (Oct.) 1930

Medical Education, State Licensure and Regulation of Practice of Healing Arts. R. V. Patterson, Philadelphia.—p. 1.
Internal Drainage of Gallbladder. W. A. Steel, Philadelphia.—p. 7.
Undulant Fever. G. S. Enfield, Bedford.—p. 9.
Acute Gonorrhea: Male. T. R. Fetter, Philadelphia.—p. 10.
Epidemic of Trichinosis in Berks County. P. Jaisohn, Reading.—p. 16.
Diagnosis of Tumor of Carotid Body. M. W. Bodine, Sayre.—p. 17.
Epilepsy vs. Diabetes. M. Trumper, Philadelphia.—p. 18.
Death Certificate Deficiencies. H. B. Wood, Harrisburg.—p. 21.
Cancer of Uterus: Preventable Disease. J. M. Fisher, Philadelphia. —p. 23.
Syphilitic Dactylitis. D. M. Sidlick and H. G. Munson, Philadelphia. —p. 29.
Chronic Coughs in Children. T. E. McMurray, Wilkinsburg.—p. 30.
*Bilateral Cryptorchid: Noneunuchoid and Allegedly a Father. M. Levin, Philadelphia.—p. 33.
Primary Pneumococcal Peritonitis. T. J. Ryan, Philadelphia.—p. 35.
Tularemia in Pennsylvania: Case. W. M. Kunkel, Harrisburg.—p. 36.
*Abdominal Pregnancy: Case. A. W. Thrush, Chambersburg.—p. 37.
Cavernous Sinus Thrombosis. F. S. Mainzer, Clearfield.—p. 38.

Bilateral Cryptorchid.—Levin reports the case of a man, aged 33, with bilateral cryptorchidism. Neither testis was in the scrotum or inguinal canal. There was no evidence of eunuchoidism. The patient began to have coitus at the age of 17. He was reputed to have become, at the age of 28, the father of a child. For the past five years he had a psychosis (apparently a psychoneurotic depression), attended by great diminution in sexual desire and potency. When examined, at 33, the prostatic secretion did not contain spermatozoa.

Abdominal Pregnancy.—In Thrush's case the fetus developed to almost full term and was living at the beginning of labor. Fecundation presumably took place in some part of the left fallopian tube, which evidently ruptured, probably about the end of the third month, and the ovum with its sac intact escaped into the abdomen and became attached to the posterior and left external surface of the fundus of the uterus. Examination showed a loop of intestine probably 8 inches in length protruding from the vaginal orifice, which was replaced, and retained with a gauze pack. Dilation of the vaginal canal disclosed a tear in the vaginal wall on the left side, extending across the front of the uterus, well above the cervix toward the right to a point well beyond the median line. This tear, of course, was sufficiently large to allow the passage of the fetus. From the nature of this tear in the vaginal wall it was evident that the

baby descended between the uterus and the bladder on the left side and that, during the passage of the head, the uterus must have been displaced to the right sufficiently to clear the canal of the pelvis and allow the head to descend. The patient had a fairly comfortable night. Continuous hypodermoclysis of salt solution was given under the left breast. The patient had no untoward symptoms on that day, but on the following day there was some distention of the abdomen. This slowly increased. Enemas failed to produce a bowel movement. The pulse became more rapid and wiry. There were several attacks of faintness. The temperature was normal with rises not exceeding 100 F. during the day. The patient gradually grew weaker and died about 100 hours after delivery.

Public Health Reports, Washington, D. C.

45: 2509-2607 (Oct. 17) 1930

*Pharmacologic Action of Certain Phenol Esters: Etiology of So-Called Ginger Paralysis. M. I. Smith, E. Elvove and W. H. Frazier.—p. 2509.
Undulant Fever: Brucella Infection in Iowa. A. V. Hardy, C. F. Jordan, I. H. Borts and G. C. Hardy.—p. 2525.

Pharmacologic Action of Phenol Esters.—A pharmacologic study made by Smith et al. of the action of the phosphoric acid esters of phenol and some of the cresols has shown conclusively that triorthocresyl phosphate, and, so far as the present evidence goes, it alone, can produce in experimental animals a specific type of motor paralysis of the extremities in every sense comparable with that which occurred recently in human victims who drank of an adulterated fluidextract of jamaica ginger. Some of the differences in species susceptibility to triorthocresyl phosphate previously reported appear now to be due to differences in its absorbability from the alimentary canal. Certain other differences in species susceptibility cannot yet be accounted for on the basis of present limited knowledge of the manner of action of this poison in the animal body. Pharmacologic evidence has been presented to show conclusively that the adulterated fluidextract of jamaica ginger used for beverage purposes, resulting in an epidemic of partial paralysis, contained triorthocresyl phosphate to the extent of about 2 per cent. The chemical evidence secured confirms the pharmacologic evidence and fully harmonizes with it. The etiologic relationship of triorthocresyl phosphate to the recent epidemic of so-called ginger paralysis is thus definitely established.

Radiology, St. Paul

15: 531-626 (Nov.) 1930

Pathology of Renal Tumors. A. Graham, Cleveland.—p. 531.
Radiation Therapy of Tumors of Genito-Urinary Tract. U. V. Portmann, Cleveland.—p. 542.
Clinical Aspects of Genito-Urinary Tumors. W. E. Lower, Cleveland.—p. 544.
Tumors of Urinary Tract. B. H. Nichols, Cleveland.—p. 547.
Spondylitis Traumatica Tarda (Kummell's Disease). E. S. Blaine, Chicago.—p. 551.
*Verruca Plantaris. J. N. Sisk, Madison, Wis.—p. 564.
Sarcoma of Stomach. R. J. Reeves, New York.—p. 567.
High Milliamperage Technic. J. D. Lawson, Woodland, Calif.—p. 574.
Effect of Varying Volumes of Air on Distribution of Roentgen Energy in Nonhomogeneous Medium. E. T. Leddy and V. Witting, Rochester, Minn.—p. 579.
Use of Radium and Deep Therapy Roentgen Ray for Last Seven Years in Private Clinic in Maine: Problems of Small Community. B. Hunt, Bangor, Me.—p. 585.
Attachment for Sweet Eye Localizer. H. B. Thompson, Seattle.—p. 590.
Method for Controlling Petrous Temporal Shadow. W. A. Rush, Beatrice, Neb.—p. 591.
Time Switch of Unusual Design. R. B. Taft, Charleston, S. C.—p. 592.
Status Thymicolymphaticus: Acute Edema of Lungs: Case. C. W. Perkins, Norwalk, Conn.—p. 595.

Verruca Plantaris.—Sisk has made a study of fifty-three cases successfully treated by the roentgen ray. Three of the patients had had three treatments with electrodesiccation three months previous to roentgen treatment; they complained of pain with electrodesiccation and the result was unsuccessful. One patient had had one radium treatment of an hour's duration, without noticeable results. The surgical treatment has been observed in three cases; the result was satisfactory but the convalescent period was long and was associated with considerable pain and some disability. With the exception of two cases, pain was relieved after the fourth day following the first roentgen treatment and the convalescent period was about four weeks; the longest period was seven weeks, at which time all evidence of the growth had disappeared. The technic is a dose twice the time required to produce a mild erythema on the flexor surfaces, with unfiltered radiation limited to the bounds of the lesion, followed, if required, in three weeks by a dose of one and one-half erythema intensity. In only two cases was it necessary to give further irradiation—the greatest number of treatments was five in a single case. In none of the cases was there a period of disability. Many of the patients mentioned that the sites treated were slightly tender to pressure for a day or two, several days after the first treatment.

South Carolina M. Assn. Journal, Greenville

26: 219-246 (Sept.) 1930

Resection of Prostate Gland Obstruction. T. M. Davis, Greenville.—p. 222.
Sodium Isoamylethyl Barbiturate as General Anesthetic. B. R. Baker, Charleston.—p. 231.
Childhood Tuberculosis. E. Cooper, State Park.—p. 234.
Confusion of Pellagra with Sprue: Case. E. A. Hines, Jr., Spartanburg.—p. 236.

Texas State Journal of Medicine, Fort Worth

26: 399-468 (Oct.) 1930

*Hypothyroidism in Pregnancy. C. F. Brown, Dallas.—p. 406.
Ocular Lesions in Syphilis: Discussion of Other Aspects of Disease. E. H. Cary, Dallas.—p. 410.
Maxillary Antrum as Focus of Infection. L. Daily, Houston.—p. 414.
Herpes Zoster Ophthalmicus in Relation to Sympathetic Ophthalmia and Inner Ear Lesion. I. Sommer, Chicago.—p. 421.
Posterior Longitudinal Bundle and Connections: Nystagmus. E. R. Carpenter, Dallas.—p. 425.
Slit Lamp in Diagnosis of Intra-Ocular Foreign Bodies. R. Castroviejo, Chicago.—p. 428.
Rapid Diagnosis of Malignant Tumors. B. T. Terry, Rochester, Minn.—p. 434.
Malignancy of Body of Uterus. O. L. Norsworthy, San Antonio.—p. 440.
Unhealthy Mouths, a Public Health Problem. W. O. Talbot, Fort Worth.—p. 444.
Value of Curative Medicine in Public Health. A. H. Flickwir, Fort Worth.—p. 447.
Treatment of Shock in Rattlesnake Bites. M. L. Crimmins, Fort Bliss.—p. 449.

Hypothyroidism in Pregnancy.—A case of hypothyroidism is presented by Brown which was followed through pregnancy and for one year following delivery, 8,880 grains (about 575 Gm.) of thyroid extract being given in twenty-four months without symptoms of overdosage. A child of the mother in the case reported was followed through its first year and showed no signs of thyroid deficiency.

United States Naval Med. Bulletin, Washington, D. C.

28: 711-891 (Oct.) 1930

Mobile Battalion Aid Station Equipment for Use with United States Marine Corps Expeditionary Forces. W. M. Garton and R. G. Heiner.—p. 711.
Intravenous Urography with Uroselectan. J. Duff.—p. 715.
Antipendulum Extension Apparatus and Fracture Frame. C. M. Shaar.—p. 718.
Physiologic Effects of High Concentrations of Carbon Dioxide. E. W. Brown.—p. 721.
Thoughts for Future. K. C. Melhorn.—p. 734.
Gunfire Deafness in Navy. G. B. Ridout.—p. 736.
Designations Used in Recording Admissions to Sick List. L. Willige.—p. 740.
Improvement in Diet for Submarine Crews. B. H. Adams.—p. 744.
Medical Mycology. G. W. Cooper.—p. 745.
Influenzal Pneumonia. T. M. Arrasmith, Jr.—p. 769.
Compression of Medulla and Upper Segment of Spinal Cord by Osteitis of Atlas and Axis: Case. H. F. Lawrence.—p. 783.
Medical Surveys: From Viewpoint of Recruiting Examiner. G. F. Cooper.—p. 787.

West Virginia Medical Journal, Charleston

26: 577-640 (Oct.) 1930

Surgical Treatment of Pulmonary Tuberculosis. C. A. Hedblom, Chicago.—p. 577.
Prevention of Puerperal Infection. T. W. Nale, Edwight.—p. 580.
New Radical Mastoid Operation. J. M. Smith, New York.—p. 586.
Relation of Sinus Disease to Pulmonary Infection: Standpoint of Roentgenologist. W. F. Manges, Philadelphia.—p. 588.
Mental Hygiene in Infancy and Childhood. A. E. Amick, Bluefield.—p. 593.
Obstruction to Upper Urinary Tract. L. H. Brumback, Hagerstown, Md.—p. 599.
Oral Focal Infection. D. C. Clark, Morgantown.—p. 602.
Pellagra. W. V. Wilkerson, Montgomery.—p. 604.
Rectal Administration of Digitalis. E. Podolsky, New York.—p. 606.
Preliminary Report of 100 Consecutive Appendectomies Without a Death. B. I. Golden, Elkins.—p. 607.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British J. Actinotherapy & Physiotherapy, London

5: 133-158 (Oct.) 1930

Ultraviolet Treatment of Tuberculosis at Municipal Clinic. J. O. Murray.—p. 135.
Light Therapy in Lupus. R. Volk.—p. 139.
Light Bath Treatment of Tuberculous Peritonitis. O. Chievitz.—p. 142.
Results of Artificial Light Treatment for Tuberculosis. G. L. Cox.—p. 143.
Treatment of Tuberculosis of Pleura by Ultraviolet Rays, Infra-Red Rays and Diathermy. E. Biancani and H. Biancani.—p. 147.
Tuberculosis of Cervical Glands and Ultraviolet Light Therapy. C. L. Pattison.—p. 148.
Light Therapy in Pulmonary Tuberculosis. J. Sorgo.—p. 149.

British Medical Journal, London

2: 549-586 (Oct. 4) 1930

Analgesia and Anesthesia in Childbirth. A. L. McIlroy.—p. 549.
*Radiography During Operation for Renal Calculus. R. J. Willan.—p. 552.
Treatment of Paranasal Suppuration Persisting After Operation. A. J. M. Wright.—p. 553.
Avertin. F. B. Parsons.—p. 554.
Congenital Radio-Ulnar Synostosis. D. J. Davies.—p. 557.
Outbreak of Puerperal Fever in Nursing Home. J. S. Manson.—p. 558.
*Blood Calcium in Diabetic Retinitis. R. D. Lawrence, K. Madders and H. R. Millar.—p. 559.
Marked Hyperglycemia Without Glycosuria. G. H. C. St. G. Griffiths.—p. 559.
*New Paste Bandage for Treatment of Varicose Ulceration and Phlebitis. C. J. Cellan-Jones and K. M. Cellan-Jones.—p. 560.
Henoch's Purpura in Adult. H. W. Pooler.—p. 562.
Fracture of Frontal Bone Involving Frontal Sinus: Formation of Intracranial Pneumocele. H. M. Grey.—p. 562.
Secondary Abdominal Pregnancy. H. F. Blacklee.—p. 562.

Radiography During Operation for Renal Calculus.—Willan asserts that radiography of an exposed kidney is a method that has come to stay. It is helpful in guarding against the recurrence of a stone. Detection of the exact site of a renal calculus by radiography is invaluable in preventing the needless sacrifice of renal tissue. Illustrative cases are given: (1) of a previously known renal calculus; (2) of an occasion when a uric acid stone was suspected but whose presence could not be proved prior to radiography of the exposed kidney; (3) of a man in whom, after supposed removal of all the calculi, a remaining stone was detected by radiography and removed; (4) of a sequel to a nephrolithotomy performed eight years before, the result being a functionless kidney owing to the extensive trauma at that operation.

Blood Calcium in Diabetic Retinitis.—Ten unselected patients with retinitis were examined by Lawrence and his associates. They were unable to detect any abnormality in the serum calcium contents of these patients. The average serum calcium of these ten cases was 9.6 mg. per hundred cubic centimeters; the lowest figure was 8.6, and the highest 11 mg. Seven cases fell between 9 and 10.5 mg., and in no case, therefore, was an abnormally low or high figure obtained. Five of the patients were males and five females. The average age was 61 years, the youngest being 44 and the oldest 71. Seven cases were severe enough to require insulin. The minimum ascertainable duration of the diabetes was two years, the maximum twenty years. Three patients showed traces of albuminuria without other evidence of Bright's disease; in them the retinal picture was that of diabetic retinitis alone. Gross arteriosclerosis was not a noticeable feature. The mean systolic pressure was 150 mm. of mercury, the diastolic 90; the highest systolic pressure was 185, the lowest 100. It is clear, therefore, that true Bright's disease and hyperpietic arteriosclerosis were not important etiologic factors in these cases, which appear to be really "diabetic" in nature.

Paste Bandage for Treatment of Varicose Ulceration.—The paste devised by the Cellan-Joneses contains the following substances in parts by weight: zinc oxide, 10; glycerin, 10; sterilized refined glue, 4; acacia, 5, and water, 30. When cold, this is a viscous medium which becomes much more fluid on warming. A sufficient quantity is placed in a double-jacketed basin and warmed by hot water. A bandage of requisite length and width is wound on one roller of the machine and carried through the basin, under a series of crossbars, to a second roller, where it is rewound after being thoroughly soaked in the warm paste. In this way a bandage impregnated with zinc oxide and possessing highly adhesive properties is produced. The bandages are wrapped in grease-proof paper and are stored ready for use in air-tight tins. They never solidify but remain soft, sticky and quite pliable, even when kept for months. No preparation is required before they are applied in the same fashion as ordinary cotton bandages.

2: 587-626 (Oct. 11) 1930

Intra-Epithelial Growth of Carcinoma. R. Muir.—p. 587.
Effects of Hypertonic Saline in Toxemias of Later Pregnancy. V. J. Harding and H. B. Van Wyck.—p. 589.
Fractures of Patella. R. W. Jones.—p. 592.
*Modification in Tracheotomy. H. G. B. Russell.—p. 594.
*Etiology of High Blood Pressure. R. G. Waller.—p. 595.
Prevention of Tuberculosis by Means of Tuberculin. R. Carswell.—p. 597.
Forty Cases of Hydatid Disease. C. H. Cuff.—p. 599.
Foreign Bodies in Upper Conjunctival Fornix. T. Colley.—p. 600.
Nicotine Poisoning by Absorption Through Skin. D. J. B. Wilson.—p. 601.
Normal Puerperium Following Labor in Latrine. J. S. Manson.—p. 602.

Modification in Tracheotomy.—Russell proposes that tracheotomy should be preceded as a routine by an attempt at intubation of the trachea, with a view to rendering the operation easier and safer of performance; and that the nasal route should be chosen rather than the buccal, whether local or general anesthesia is employed. To this end it is urged that the tracheotomy set, which should have a place in every operating theater, should comprise a catheter suitably curved on a stylet, with a spray duly charged with cocaine; and that students should be shown the maneuver of nasal intubation—for example, during their period of anesthetic instruction. The acquisition of familiarity with this simple procedure should render a house physician's first tracheotomy a less alarming affair than it sometimes proves.

Etiology of High Blood Pressure.—Waller concludes that hypertension is due to the presence in excess of a specific amino-acid. This excess may be due to retention resulting from renal disease, to overproduction, or more probably to some impairment of hepatic function whereby this body is not efficiently destroyed.

Edinburgh Medical Journal

37: 569-608 (Oct.) 1930

Circulating Fluid. G. L. Gulland.—p. 569.
Paramastoid Process in Human Subject and Association with Deformation of Atlas and Epistropheus. D. M. Greig.—p. 582.

Glasgow Medical Journal

33: 153-208 (Oct.) 1930

Asthma. J. Adam.—p. 153.
*Septic Coronary Thrombosis with Myocardial Infarction, Embolic Infarction of Complete Kidney and Death from Uremia. A. A. F. Peel.—p. 168.

Septic Coronary Thrombosis.—The clinical features of interest in the case reported by Peel were: History of a mild infection associated with nasal catarrh, shivering and malaise. Four days later, sudden onset of symptoms suggesting myocardial infarction, which persisted for twelve hours in acute form. Recurrence of the cardiac symptoms after a further thirty-six hours with extreme disturbance of the peripheral circulation. While these symptoms persisted, supervention of tenderness in the right loin, absolute anuria, delirium, and evidence of uremia prior to death after thirty-six hours more. The pathologic conditions found (given in the order of the probable age of each lesion) were: Subacute diffuse nephritis. Septic endarteritis of a branch of the left circumflex coronary artery, with various stages in the formation of septic thrombi in its smaller divisions. Numerous areas of necrosis of the heart muscle, mainly periarterial, within the area of distribution of the affected vessel. Septic interstitial myocarditis limited to the area of distribution of the affected vessel. Secondary endocarditis of the overlying area of endocardium; intraventricular thrombosis. Embolus in right renal artery with complete infarction of right kidney; embolus in basilar artery. Congested, edematous brain. Generalized acute venous congestion. "Septic spleen." The cardiovascular system was remark-

ably free from degenerative pathologic changes in a man of his years (59), atheromatous changes being limited to one ulcer in the abdominal aorta, a few minute flecks of early atheromatous infiltration of the ascending aorta, and one or two similar flecks in the coronary arteries close to their origin; no evidence of arteriosclerosis either in the arteries or in the shape of preexistent renal disease of chronic type. On the other hand, the arteries showed an interesting congenital peculiarity, the medium-sized arteries being extremely thin walled and difficult to distinguish from the veins macroscopically, and the abdominal aorta being unusually narrow. This condition had not given rise to any symptoms during life.

Annales de l'Institut Pasteur, Paris

45: 291-414 (Sept.) 1930

Diphtheria Toxoid in Active Immunization of Human Beings and in Prophylaxis of Diphtheria. G. Ramon.—p. 291.
Specific Antitoxin Content of Serum of Persons Vaccinated with Diphtheria Toxoid. G. Ramon and R. Debré.—p. 326.
Toxins and Antitoxins: Composition and Method of Union. S. Schmidt.—p. 337.
Tetanus Antitoxin: Technic of Production and Results of Use. P. Descombey.—p. 373.
Unicity or Plurality of Rabies Virus. P. Remlinger and J. Bailly.—p. 376.
*Syphilis: Bismuth Therapy. A. Schwartz.—p. 386.
Certain Strains of Leptospira. J. E. Dinger and F. Verschaffelt.—p. 396.

Syphilis: Bismuth Therapy in Fournier's Clinic.—Schwartz describes the results obtained by bismuth therapy in more than 5,000 syphilitic patients during a period of ten years. The preparations of insoluble bismuth salts in oil suspension that were used during the first few years produced uniformly excellent results. Their action was not quite so rapid as that of arsenic but was fully as efficacious. In fact, lesions that had resisted treatment by arsenic and mercury yielded to bismuth. In addition to this, the bismuth treatment caused none of the dangerous reactions that are likely to follow the injection of arsphenamine. However, the insoluble bismuth salts were not so rapid in their action as arsphenamine, their absorption was sometimes irregular, and the results were hard to regulate because of the impossibility of accurate measurement of the quantity of metallic bismuth in the suspension. Fournier and Guenot endeavored, therefore, to perfect the method so as to eliminate these difficulties. The result of their efforts was the development of the use of bismuth salts soluble in oil or liposoluble bismuths. These preparations are as rapid in their action as arsphenamine and have a more constant and lasting serologic action. Bismuth resistance has not been observed in any of the patients so treated in the clinic, and the results have been highly successful. The method now employed is that of intramuscular injections of 2 cc. of oil solution containing an equivalent of 0.08 Gm. of metallic bismuth, from ten to twelve injections usually being sufficient. The first three injections are given every two or three days and the later ones twice a week.

Presse Médicale, Paris

38: 1257-1272 (Sept. 17) 1930

*Electrocardiographic Anomalies in Infectious Diseases. A. Clerc and R. Levy.—p. 1257.
*Spasm of Oddi's Sphincter as Cause of Jaundice. I. Nanu-Muscel and I. Pavel.—p. 1260.

Electrocardiographic Anomalies in Acute Infectious Diseases.—Clerc and Levy are convinced that the anomalies revealed by electrocardiography in infectious diseases are worthy of serious consideration both as a confirmation of anatomic and clinical observations and for their independent semeiologic and prognostic value in cases in which more obvious manifestations are lacking. For instance the elongation of the P-R interval in a severe case of endocarditis showed the existence of acute rheumatism, although there was no evident arthralgia; medication with salicyl compounds gave good results. While the results thus far obtained have not determined the exact future indications in the various electrocardiographic anomalies observed, they have shown that conditions may be revealed in this way even when the physical examination is negative and that the persistence of the anomalies may have marked significance.

Spasm of Oddi's Sphincter as Cause of Jaundice.—Nanu-Muscel and Pavel describe two cases in which chronic jaundice was caused by a spasm of Oddi's sphincter due to pancreatic disturbances. In the first case, the primary infection was a chronic pancreatitis, in the second it was a cancer of the head of the pancreas. In the latter case, although the cancer itself might later have caused the jaundice, the spasm of the sphincter occurred before the cancer was sufficiently developed to constitute a mechanical obstacle. From the therapeutic standpoint, a purely medicinal treatment to counteract the original infection is usually sufficient. In the first of the cases described the patient was cured by intravenous injection of methenamine and sodium salicylate. The authors are convinced that a reflex spasm of Oddi's sphincter is the direct cause of a great many cases of chronic or prolonged jaundice both when no mechanical obstruction can be determined, as in the case of chronic pancreatitis which they describe, and as a preliminary or a coexistent functional obstacle when there is also a mechanical obstacle present.

38: 1273-1288 (Sept. 20) 1930

*Parenteral Hepatotherapy in Anemia. C. Achard and M. Hamburger.—p. 1273.
Use of Preoperative Vaccination in Operation on the Stomach. J. Murard.—p. 1274.
*Digestive Troubles from Artificial Pneumothorax. L. Bonafé and H. Mollard.—p. 1277.
Diabetes: Bouchardat's Diet. F. Maignon.—p. 1280.

Parenteral Hepatotherapy in Anemia.—The classic method of hepatotherapy, that of eating raw liver, produces excellent results in the treatment of anemia. However, several weeks of treatment is usually necessary before much amelioration is perceived, which is disastrous in many severe cases. Extract of liver taken by mouth often causes serious digestive disturbances and can rarely be tolerated by a patient for more than a few days. Achard and Hamburger gave intramuscular injections of liver extract in several cases with good results. This method permits the initial injection of quantities of extract far superior to the amount of liver that could be taken orally; its action is therefore more rapid. The organism also seems to absorb the extract more rapidly when so administered than when it passes through the digestive tract. The only objection to the method of intramuscular injection is the fact that painful cutireactions often occur that necessitate discontinuing the treatment. To avoid this the authors tried giving intravenous injections instead of intramuscular ones. While the patient tolerated the injections perfectly, the amelioration thus effected was only temporary. However, the intravenous method has not been given a systematic trial and might prove more successful. At any rate, intramuscular injection has proved itself to be valuable as a treatment of attack to bring immediate results, and if the patient should find that the injections are too painful, the classic method may be resumed when the cure is under way.

Digestive Troubles from Artificial Pneumothorax.—The digestive troubles often observed in connection with an artificial pneumothorax are sometimes localized in the stomach, intestine or liver, and are sometimes general. In cases of gastric localization the patient begins to eat with good appetite but his stomach soon feels full, painfully enlarged and heavy. Often the discomfort is increased when he is in a recumbent position. Vomiting also occurs frequently. In a few cases the reaction may be caused by the purely mechanical action of the pressure of the diaphragm on the gastric organs. However, Bonafé and Mollard believe that in most cases it is due to a reflex associated with a condition of aerophagy. In the intestinal tract, the chief manifestations noted are diarrhea and symptoms of tuberculous enteritis. These are not, however, the direct result of the pneumothorax; the infections were already present and their appearance was merely accelerated by the operation. The hepatic disturbances that are observed in rare instances are undoubtedly caused by the purely mechanical action of the lowered diaphragm. Often instead of a localized reaction the patient merely loses weight and feels a general loss of appetite, which is undoubtedly caused by the interruption of the normal function of the lungs in lipodieresis and neutralization of toxins. All these digestive disturbances are benign and disappear within a few weeks. They are, therefore, in no way an argument against the use of the pneumothorax.

38: 1289-1304 (Sept. 24) 1930

Morphologic Type of Resistance to Pulmonary Tuberculosis. A. Jacquelin. —p. 1289.

*Ambulatory Treatment of Diabetes for General Practitioner. J. J. de Jong.—p. 1292.

Ambulatory Treatment of Diabetes for General Practitioner.—De Jong describes a treatment of diabetes that can be used by any physician and that permits the patient to continue his normal life. It consists merely of a simple diet to reduce the glycosuria. The initial daily ration is 200 Gm. butter and 1,000 Gm. legumes (1,700 calories). In addition, he sanctions coffee, tea, mineral water and red wine. The patient comes to the clinic for urinalysis every few days. When the glycosuria has disappeared, as should be the case within two weeks, one egg or 50 Gm. of potatoes is added to the diet. In a few days, if the potatoes were chosen, an egg is added or vice versa. Then an additional 50 Gm. of potatoes and a second egg are included. The daily diet is thus 1,000 Gm. of legumes, 200 Gm. of butter, 100 Gm. of potatoes and two eggs, a total of 1,962 calories. This diet is generally reached in three weeks. If the patient remains aglycosuric, the writer adds 20 Gm. of bread and 25 Gm. of cheese. Little by little, fruits, meat, fowl, fish and lard are added and at the same time the quantity of legumes and butter is diminished, until after several weeks the patient has an adequate and varied diet at his disposal. This treatment is manifestly impossible in cases that show complications such as tuberculosis or infections of the heart, which require special clinical care. The patient should moreover be most carefully watched during the first two weeks; if at the end of that time glycosuria still persists, insulin treatment is probably necessary. However, many chronic cases of diabetes may be successfully relieved by this means, especially if the physician explains the nature of the disease to the patient, so that he understands the importance of strict adherence to the prescribed diet.

Archivio Italiano di Urologia, Bologna

6: 445-540 (Sept.) 1930

Modifications Induced by Presence of a Foreign Body in Ureteral Stump Following Nephrectomy. P. Pieraccini.—p. 445.

*Roentgen Examination of Tuberculous Kidney. R. Rinaldi.—p. 481.

*Single Congenital Ectopic Hydronephrotic Kidney. A. Marsella.—p. 495.

*Significance of Aberrant Renal Vessels for Pathogenesis of Uropyonephrosis. V. Lozzi.—p. 515.

Roentgen Examination of Tuberculous Kidney.—Rinaldi points out that there are many anatomic varieties of renal tuberculosis and that arteriography will reveal only a stenosing panarteritis, which gives no precise information. To pretend that arteriography will permit the roentgen demonstration of all tuberculous lesions of the kidney is absurd. Possibly the Dos Santos method will show whether the functional deficit, so early observed in tuberculous kidney when the specific lesions are still slight, is the consequence of an advanced arterial insufficiency of the kidney itself. It is possible that the future will change totally the practical interest of this new method of examination, so that it will give early an exact picture of the circulatory modifications of a diseased viscus. But it will not replace the functional examination of the urine, which, with all its causes of error, with all its possible variations, and, above all, with its strict requirements as to precision, technic and patience, will remain the classic means of diagnosis in urinary tuberculosis.

Single Congenital Ectopic Hydronephrotic Kidney: Two Cases.—Marsella says, with regard to the treatment of such a kidney, that the mere fact that the kidney has an abnormal location is not in itself a justification for surgical intervention. If the kidney is functioning normally in its abnormal position, it should not be disturbed. However, cases have been reported in which a pelvic kidney was a hindrance to pregnancy and was the cause of repeated abortions. In such cases, it is advisable to try to place the kidney in a higher position—in the vicinity of the iliac crest, if possible—but it is usually firmly fixed and does not lend itself to removal owing to the shortness of the vessels. If the kidney is a hindrance to the completion of the birth act, it is an indication for cesarean section.

Significance of Aberrant Renal Vessels for Pathogenesis of Uropyonephrosis.—Lozzi brings out that in all his cases the anomalous vessel must be regarded as the primary cause in the genesis of the hydronephrosis. It is established, however, that there was also a slight degree of exaggerated renal mobility. Treatment should be applied as early as possible, and depends on the anatomofunctional state of the kidney. In incipient cases it will suffice to resect the vessel, eliminate the adhesions if any, and fasten the kidney in a favorable position. Fixation alone does not suffice, as has been shown in numerous cases of other authors, and as was shown in two of Lozzi's cases. In cases of advanced uronephrosis or uropyonephrosis, it is necessary to resort to nephrectomy, which was done in eight of the author's cases. The results secured were good in nearly every instance. The remote results in the cases in which it was possible to get exact information have been more than satisfactory, the clinical recovery having been maintained.

Riforma Medica, Naples

46: 1305-1344 (Aug. 18) 1930

Paranephric Abscess. D. Giordano.—p. 1307.

Hypertonic Solutions of Dextrose in Treatment of Acute Peritonitis. R. Lombardi.—p. 1310.

*Gastric Leukodiapedesis. U. Santomauro.—p. 1313.

Gastric Leukodiapedesis.—The phenomenon of leukodiapedesis has been generally observed in many different mucosas and variously interpreted. Santomauro conducted a series of experiments on dogs by means of microscopic examination to determine the nature of gastric leukodiapedesis as a phase of the general phenomenon of leukodiapedesis. From these experiments he draws the following conclusions: In different stages in the digestion of meat the number of leukocytes passing through the mucosa is always less than during a period of fasting. Experimental conditions that logically cause an irritation in the mucosa cause transmigration of a still greater number of leukocytes than is observed during either digestion or fasting. The phenomenon of gastric leukodiapedesis, therefore, seems to the author to be linked not so much with the specific digestive function of the mucosa as with more general functions of defense or resistance. These conclusions are in direct contrast with those presented by Marchal in 1925, who claimed that gastric leukodiapedesis was directly connected with the digestive function.

46: 1345-1380 (Aug. 25) 1930

*Antagonism Between Epinephrine and Ergotamine, and Respiratory Exchange. R. Capo.—p. 1347.

Biotypologic Ceco-Appendicular Semeiography. W. Berardinelli.—p. 1353.

*Echinococcus Cysts of Thyroid. G. Sabatini.—p. 1357.

How Can Epithelium of Renal Pelvis Be Recognized in Urinary Sediment? E. U. Fittipaldi.—p. 1360.

Antagonism Between Epinephrine and Ergotamine, and the Respiratory Quotient.—Capo experimented to discover whether ergotamine will counteract the increase of energy exchange caused almost constantly by epinephrine, whether administered fasting or after the ingestion of food (dynamic-specific action). From his researches, he concludes that ergotamine does not modify the greater consumption of oxygen induced by epinephrine but that it does cause, when administered fasting, a notable lowering of the elimination of carbon dioxide and a reduction of the respiratory quotient. His study of the gas exchange demonstrated the antagonistic action that these two substances exert on carbohydrate exchange. Epinephrine causes a mobilization of hepatic glycogen and thus increases almost constantly the elimination of carbon dioxide and raises the respiratory quotient. Ergotamine, on the other hand, inhibits the hyperglycemia that is induced by the epinephrine without modifying the increased intra-organic combustion caused by epinephrine. In other words, under the action of ergotamine, epinephrine, though glycogenolysis is checked, stimulates the cells to a greater combustion, and these cells, not having sufficient carbohydrates at their disposal, burn other reserve substances, namely, the fats, thereby lowering the respiratory quotient.

Echinococcus Cysts of Thyroid.—Sabatini describes a case of echinococcus cysts in a man, aged 21, who came with a diagnosis of cystic goiter. The intervention revealed about thirty hydatid cysts, buried in pus, whose presence explained the pain and the rapid growth of the tumor. Thick and tenacious adhesions, provoked by the suppuration of the cysts, necessitated marsupialization. The patient recovered completely.

Deutsche medizinische Wochenschrift, Berlin

56: 1599-1640 (Sept. 19) 1930

Tuberculosis Vaccination with B C G Vaccine. F. Neufeld.—p. 1599.
Results of Endopleural Cauterization in Artificial Pneumothorax. Unverricht.—p. 1601.
*Mechanism of Liver Diet in Pernicious Anemia. R. Duesberg.—p. 1604.
*Influence of Hormonal Preparation from Anterior Lobe of Hypophysis on Various Forms of Hypogenitalism in Men. B. Schapiro.—p 1605.
Pharmacologic Evaluation of Purgatives That Increase Bulk of Intestinal Contents. F. Berg.—p. 1607.
Fatal Hemorrhage from Ruptured Ovarian Sarcoma in Primigravida During Ninth Month of Pregnancy. H. Goecke.—p. 1610.

Mechanism of Liver Diet in Pernicious Anemia.—Duesberg states that during pernicious anemia the blood does not contain methemoglobin. However, when liver therapy is instituted methemoglobin appears in the blood and, following this change in the decomposition of the blood pigment, regenerative processes set in. Therefore it was assumed that the active substance in the liver is a producer of methemoglobin. This substance causes a disintegration of the immature erythrocytes by changing hemoglobin into methemoglobin. The methemoglobin, or substances that are formed simultaneously with it, stimulate the bone marrow to such an extent that it changes its action and again produces normal erythrocytes that have a greater resistance. As experiments on healthy persons indicate, these erythrocytes likewise disintegrate quickly; however, if sufficient liver is given, formation and disintegration are in equilibrium. Observations on patients and the results of experiments on animals could be substantiated in experiments in vitro. In all liver preparations examined there existed a substance that formed methemoglobin in vitro. The greater the purity and the concentration of the liver preparation, the more rapid was the change of hemoglobin into methemoglobin. The preparations of desiccated stomach, which recently have been used with good effect in cases of pernicious anemia, contain the same active substance as liver. Meat has the same effect on the blood status in pernicious anemia if it is first treated with the gastric juice of healthy persons. It has also been found that the hematologic symptoms in patients with pernicious anemia could be improved when normal gastric juice was introduced. Tests revealed that the substance is not present in pernicious anemia but is present in normal persons.

Influence of Hormone from Anterior Lobe of Hypophysis on Hypogenitalism.—Schapiro describes the effects that he obtained with a hormonal preparation of the anterior lobe of the hypophysis. The preparation contained 100 rat units per ampule. It was employed on twenty-six male patients with hypogenitalism. The author classifies the patients into four groups. To the first group belong the eunuchoids of the slender type. There were six men ranging in age from 19 to 29. To the second group belong patients with genital hypoplasia, adipositas and decreased specific dynamic action. There were fifteen children ranging in age from 9 to 18 and one man aged 27. To the third group belong patients with infantilism in the sense of a generalized arrest in the development; in this group there were two children aged 14 and 18. To the fourth group belong those with cryptorchidism; in this group there were two children aged 12 and 16, respectively. Cryptorchidism was also observed in eleven cases of the first three groups. In describing the growth effects of the treatment, the author differentiates between three degrees of maturity. As the first degree of maturity he considers beginning growth of the testes and penis, increase in the pubic hair and in the axillary hair, and in cryptorchids a partial descent of the testes. As the second degree of maturity he considers complete descensus, enlargement of the testes and penis but not yet to normal size, and there is not yet a production of semen. Third degree maturity is complete sexual maturity and the presence of living spermatozoa in the ejaculate. A maturity of the first degree developed in all twenty-six cases; in fourteen instances a maturity of the second degree was noted and in nine cases a complete maturity resulted. The best results were obtained in those persons who were near the age of puberty. The hypophyseal extract also influences the gas metabolism. The specific dynamic action is increased and in most cases also the basal metabolism. It is probable that the typical slender eunuchoidism is not always primarily of a genital origin but is often due to hypophyseal disorders.

Münchener medizinische Wochenschrift, Munich

77: 1567-1614 (Sept. 12) 1930

*Newer Methods for Determination of Paternity. W. Mau.—p. 1567.
Occurrence of Types Newport and Oranienburg (Paratyphoid C Group). W. Rimpau and K. Steinert.—p. 1570.
Treatment of Chronic Suppurative Processes of Bones and Soft Parts of Extremities by Means of Local Hyperacidity. H. Watermann and A. Kemper.—p. 1572.
Sulphur as Homeopathic Remedy. A. Bier.—p. 1575.
Sanitary Regulations for Manufacturing of Ice Cream. Hoch.—p. 1578.
Possibility of Detoxicating Intestinal Contents by Means of Salt from Vange Spring in England. Hinz and Pinner.—p. 1579.
Treatment of Fracture of Head of Tibia. R. Syller.—p. 1586.
Increasing Therapeutic Influence of Lactic Acid Treatment of Nonspecific Leukorrhea by Means of Carbon Dioxide. H. Treber.—p. 1591.
Alkali Achylia and Other Disadvantages of Alkali Therapy of Stomach. K. Westphal and W. Kuckuck.—p. 1592.

Newer Methods for Determination of Paternity.—Mau points out that in recent years new methods have been devised for the determination of paternity. In the first part of the article he discusses dactyloscopy, which has been used widely in criminology. It is known that the finger prints of an individual are never identical in all details with the finger prints of another person. However, it has been noted that between the finger print patterns of parents and children there is a certain resemblance. The author discusses the characteristics of the four main types of finger prints and shows their significance in the determination of paternity. He comes to the conclusion that dactyloscopy is as yet not entirely satisfactory for the determination of paternity. In the second part of the article, several blood tests are evaluated. By means of the test based on the heredity of the blood groups it is not always possible to detect the father of a child; however, if a man has a blood group that has no relation to that of the child, he cannot be the father. The author further describes Zangemeister's method. In this test a decrease in the light permeability can be detected with the step photometer, when the serum of the child is mixed with that of the father. However, when the serum of another man is added to that of the child the decrease does not become manifest. According to Zangemeister the reaction is due to the fact that during pregnancy, as a result of the presence of the paternal sperm protein, antibodies are formed in the blood of the mother and of the child. The reduced light permeability that results when the serums of father and child are mixed is due to the presence of these antibodies. Regarding the practical value of Zangemeister's serologic method, the author states that although Zangemeister himself has always obtained positive reactions, he and several other investigators have found the test not entirely reliable. Further tests will be necessary to determine whether Zangemeister's reaction will be a reliable method for the determination of paternity.

77: 1615-1656 (Sept. 19) 1930

Liver Symptoms in Poisoning Caused by Edible Turban-Top (Helvella Esculenta). K. Landé.—p. 1615.
*Symptomatic Fulminant Purpura in Meningococcus Sepsis. F. Seeber.—p. 1617.
*Clinical Aspects and Diagnosis of Hypophyseal Cachexia. K. Herman.—p. 1620.
Sulphur as Isopathic Remedy. A. Bier.—p. 1621.
Treatment of Pernicious Anemia with Powder of Desiccated Stomach. K. Gutzeit.—p. 1625.
Possible Causes of Failure of Chemotherapy. K. Ziegler and Dörle.—p. 1626.
Rest in Bed and Care in Diseases of Childhood. P. Karger.—p. 1627.
Disorders in Vertebral Column After Amputation of Thigh. E. Schrader.—p. 1629.

Symptomatic Fulminant Purpura in Meningococcus Sepsis.—Seeber describes the case of a girl, aged 15, in whom purpura was only a symptom of a generalized disease. A severe meningococcal infection was the cause, and it may be assumed that a congenital hypersensitivity of the patient's skin increased the tendency to bleeding. The case ended fatally within twenty-four hours. Microscopic examination revealed the severity of the infection. Pathogenic micro-organisms were found in nearly all the organs. The term symptomatic fulminant purpura applies to infections with a foudroyant course and which are accompanied by symptomatic, hemorrhagic diathesis.

Clinical Aspects and Diagnosis of Hypophyseal Cachexia.—Herman reports the case of a woman, aged 48, who was anemic and cachectic. She complained of lack of appetite and of vomiting. On the basis of these symptoms, cancer of the

stomach was assumed; however, the roentgen examination did not verify the diagnosis. The Wassermann reaction was negative, the blood picture did not indicate pernicious anemia, and there were no signs of parasitic infestation. Then lymphogranulomatosis of the retroperitoneal lymph nodes was thought of and also hypophyseal cachexia. In consideration of the possibility of these two conditions, the woman was again thoroughly examined. Decayed teeth and a high degree of psilosis were discovered. There was no axillary hair, and the pubic hair was scanty. The sella turcica was normal. The author points out that gastric disorders, cachexia, anemia, decaying teeth and deficient hair growth are found in hypophyseal cachexia and on the basis of these symptoms he diagnosed the case. He instituted a substitution therapy by giving a hypophyseal preparation and also administered hydrochloric acid. As a result of the treatment the gastric symptoms disappeared and the woman's general condition improved considerably. In the conclusion it is pointed out that whenever gastric, hematologic and endocrine symptoms concur, hypophyseal cachexia should be thought of.

Strahlentherapie, Berlin

37: 595-813 (Sept. 2) 1930

*Roentgen Irritation-Therapy of Genital Diseases in Female. L. Seitz.—p. 595.
Roentgen Therapy of Tuberculosis of Adnexa. H. Eymer.—p. 603.
Roentgen Demonstration of Hypertorsion of Cervical Vertebral Column in Child. E. Kehrer.—p. 609.
Diagnosis and Treatment of Intermittent Hydrosalpinx: Case. O. Polano.—p. 619.
Ten Years' Experience with Gynecologic Roentgen Therapy in University of Budapest. F. Gál.—p. 623.
Elimination of Nitrogen in Urine After Roentgen or Radium Irradiation. G. K. F. Schultze.—p. 642.
Comparative Researches on Blood Injury from Roentgen Rays with Old Method of Irradiation or with Metalix Tubes. W. Fürst.—p. 659.
*Roentgen Therapy in Case of Myeloid Lenkemia. S. Hammerschlag and H. Knospe.—p. 693.
Saturation Method of Pfahler and Kingery in Roentgen Therapy of Cancer. H. Holfelder.—p. 696.
Theoretical and Practical Bases of Prolonged and Mild Irradiation Method. G. Schwarz.—p. 709.
Alimentation of Cancer Patients. W. Caspari.—p. 719.
Roentgen Therapy of Sarcomatous Exudative Pleurisy. I. Heeren.—p. 735.
Accumulation of Active Bismuth in Malignant Tumors. H. Kahn.—p. 751.
Adjuvant Measures in Roentgen Therapy of Cancer. H. Hirsch.—p. 767.
Changes in Skin Tolerance Under Various Ray Doses. A. Reisner.—p. 779.
Time Factor in Reaction of Protein to Irradiation. W. Gentner and K. Schwerin.—p. 788.
Present Methods and Results of Divided Doses of Rays in Treatment of Cancer. L. Freund.—p. 795.

Roentgen Irritation-Therapy of Subacute or Chronic Genital Diseases in Female.—Seitz's experience includes 380 cases in which irritation doses of roentgen rays were applied for treatment of an inflammation of the genitalia. Fourteen of the women were affected with parametritis; the remainder with adnexitis or with pelviperitonitis. The irradiation (180 kv.) was applied to an abdominal field 20 by 24 cm. The rays were filtered through 1 mm. of copper and 1 mm. of aluminum. From 15 to 20 per cent of unit skin doses were applied to the skin, and from 4 to 6 per cent of unit skin doses penetrated into the pelvis. The dose of roentgen rays reaching the ovaries did not exceed from one sixth to one eighth of the castration dose and therefore was considered as harmless. In most of the cases the irradiation was used once; in a few cases it was repeated one or two weeks later. Exceptionally a third irradiation was required. The roentgen therapy was combined with the usual conservative measures as, for instance, hot air, hot irrigations or diathermy. In 77.9 per cent of the patients with adnexitis or pelviperitonitis, a considerable improvement of the subjective and of the objective signs was noted; in 11.7 per cent, the subjective signs alone were favorably influenced. In the remainder (10.4 per cent) the treatment was without effect. The results of the treatment proved to be the same whether the adnexitis was of gonorrheal or of septic origin, as after abortion or puerperal fever. The improvement was always accompanied by reduction of the leukocytosis and by retardation of the accelerated sedimentation of the erythrocytes. Both reactions were most pronounced in cases of gonorrheal adnexitis. In all cases of acute parametritis the roentgen therapy promoted the resorption process or accelerated the formation of an abscess. The author stresses that in cases of acute gonorrheal adnexitis the treatment should be either avoided or used with extreme caution.

Roentgen Therapy in Case of Myeloid Leukemia.—Hammerschlag and Knospe report the case of a woman, aged 35, who was admitted to the hospital with a presumptive diagnosis of an ovarian tumor. On examination, the genitalia appeared normal; the abdominal tumor proved to be an extremely enlarged spleen descending into the small pelvis. Blood examination pointed to a typical myeloid leukemia; the number of leukocytes was 255,000, with a predominance of myeloblasts. On account of the poor general condition, extirpation of the spleen was excluded and roentgen therapy was tried. One third of a unit skin dose was applied to a field 10 by 15 cm. About 190 kv. and 2 milliamperes were used for the irradiation, with a zinc filter of 0.5 mm. and an aluminum filter of 1.0 mm.; the focus-skin distance was 40 cm. The irradiation was well tolerated by the patient. On the fourth day after the irradiation, the fever disappeared; the general condition improved. The number of leukocytes became reduced to 88,000; the blood picture approached normal. On the eighth day, the size of the spleen decreased; its lower border could be perceived beneath the umbilicus. After a sojourn of two weeks in the hospital, the patient was discharged. She was readmitted to the hospital a year later. On blood examination, 120,400 leukocytes and a predominant number of myeloblasts were found. The spleen reached the upper edge of the pubic symphysis. The irradiation was renewed (the same dose of rays as the first time); within fourteen days the number of myeloblasts decreased and that of the leukocytes was reduced to 70,000. The size of the spleen became smaller by three fingerbreadths. Up to the present, the irradiation has been twice repeated. During the two years of treatment, the patient was able to do housekeeping. It is expected that, by continuing the treatment, the improvement of the patient may persist.

Wiener klinische Wochenschrift, Vienna

43: 1133-1160 (Sept. 11) 1930

*Practical Value of Spirometry in Pulmonary Tuberculosis. H. Kutschera-Aichbergen.—p. 1133.
Comparative Serologic Investigations with Simplified Method of Müller's Conglobation Reaction. A. Bergel.—p. 1137.
*Etiology of Articular Rheumatism. E. Risak.—p. 1141.
Mechanism of Paroxysmal Cardiac Dyspnea and of Bronchial Asthma. H. Januschke.—p. 1146.
Etiology of Narcolepsy. K. Tsiminakis.—p. 1147.
Relation Between Tuberculous Pleurisy and Psoriasis. H. Mayrhofer.—p. 1149.
Surgery of Liver and of Bile Passages. J. Schnitzler.—p. 1149.
Therapy of Pyelitis and Pyelonephritis. T. Hryntschak.—p. 1150.

Practical Value of Spirometry in Pulmonary Tuberculosis.—Kutschera-Aichbergen shows that spirometry, or the determination of the vital capacity, is a valuable aid in determining the functional capacity of the lungs. First he defines vital capacity and describes the technic of spirometry. Then he explains the formula according to which the normal vital capacity may be estimated. Whenever spirometry reveals a marked reduction of the normal vital capacity, a pathologic condition exists. The author further describes the vital capacity in pulmonary tuberculosis. Tuberculous changes in the lungs, especially exudative processes, reduce the vital capacity. Because the technic of spirometry, as well as the required apparatus, is so simple, the general practitioner can easily make use of it. This method facilitates the diagnosis of the exudative early forms of tuberculosis, the early infiltrate and its sequelae. A comparison of spirometric tests makes it possible to determine the further dissemination, or the progress in the cure of the tuberculous process, without the aid of a roentgen apparatus. However, it is interesting and instructive to compare the results of spirometric tests with the roentgenograms. In cases of phrenic avulsion, pneumothorax and other forms of collapse therapy the determination of the vital capacity indicates their encroachment on the functioning of the lungs.

Etiology of Articular Rheumatism.—Risak points out that recently several authors have reported observations that again bring into prominence the question of the bacterial pathogenesis of articular rheumatism. Reitter and Löwenstein assume a tuberculous origin. The author describes the results of examinations of the exudates from the joints of patients with rheu-

matic polyarthritis. The bacteriologic tests always gave negative results, the staining tests as well as the cultures. Several animal experiments likewise gave negative results. The author further reports the clinical history of a patient in whom, besides old and new tuberculous processes in the lungs, there also existed a tuberculous lymphadenitis. The anamnesis and the clinical observations indicated that a rheumatic polyarthritis existed simultaneously with, but independent of, the tuberculosis. Two other cases are reported in which a polyarthritis developed in connection with a tonsillitis. However, the author sees no definite proof for the assumption that bacteria caused the exudates in the joints. The clinical aspect in these cases spoke against a bacteriologic pathogenesis. In the conclusion the following statement is made: The fact that, in rare cases of polyarthritis, bacteria can be found in the exudates of the joints, does not justify the assumption of a bacteriologic pathogenesis for all cases.

43: 1161-1188 (Sept. 18) 1930

Actinotherapy of Malignant Tumors in Sweden. G. Forssell.—p. 1161. C'td.
Cure of Filariasis with Gold Therapy and Malariotherapy. E. Neuber. —p. 1165.
*Advisability of Extirpation of Spleen in Pernicious Anemia. G. Spengler. —p. 1167.
Treatment of Menopausal Disorders. J. Stur.—p. 1168.
Experiences with Ponndorf's Cutaneous Vaccination (Vaccine A and B) in Tuberculosis. M. Greil.—p. 1172.
Tonsil Problem: Local Centrifugal Defense Reaction Against Infection. J. Treer.—p. 1173.
Plastic Surgery for Reducing Size of Ears. J. Eisenklam.—p. 1176.
Value of Percussion Auscultation. G. von Berencsy.—p. 1176.
Modern Methods of Anesthesia. G. Lotheissen.—p. 1178.

Advisability of Extirpation of Spleen in Pernicious Anemia.—Spengler gives the case reports of two patients with pernicious anemia in whom the spleen had been extirpated. In both instances a remission lasting eleven and ten years, respectively, was effected. Observations on the splenectomized patients prove that the liver and the spleen have an antagonistic action in the regulation of the erythrocyte content of the blood. Because of the good results that recently have been obtained with liver diet and with desiccated hog stomach, it would not be advisable to abandon these treatments in favor of splenectomy with its comparatively high operative mortality (20 to 30 per cent). However, in cases in which liver diet and stomach powder do not bring the desired results, splenectomy may be resorted to. The two cases reported prove that extirpation of the spleen is of therapeutic influence not only in cases of familial hemolytic icterus but also in pernicious anemia.

Zeitschrift für Urologie, Leipzig

24: 721-800, 1930

Nephrosis, Amyloidosis of Kidney and Amyloid Contracted Kidney: Diagnosis. R. Chwalla.—p. 721.
*Exclusion of Kidney by Roentgen Irradiation. P. Halbfas-Ney.—p. 734.
*Chorio-Epithelioma of Testis. I. B. Scheftel.—p. 739.
Wandering Ligature in Urinary Bladder: Three Cases. G. Petrén.—p. 748.
Ureterocele: Five Cases. G. Petrén.—p. 758.
Prostatitis: Diagnosis. J. F. Zhorno.—p. 771.

Exclusion of Kidney by Roentgen Irradiation.—Halbfas-Ney reports a case of left-sided pyonephrosis in a woman, aged 59, who had previously had numerous attacks of pyelitis. Because of the poor general condition of the patient (myocarditis, high blood pressure and chronic bronchitis), nephrectomy was deemed too dangerous. Therefore a nephrostomy was performed under local anesthesia and a large amount of pus was evacuated. Two rubber drains were then introduced. The operation was followed immediately by a return of the temperature to normal. Six days later the patient felt better and the drains were shortened. Two days later they were removed and a gauze strip was introduced. Through the fistula there passed a large amount of urine. To stop the discharge of urine, two roentgen irradiations were given. In the first irradiation, 100 per cent of a unit skin dose was applied to the lumbar region over an area of 8 by 8 cm. and through a zinc filter 0.5 mm. thick and an aluminum filter 1 mm. thick at a focal distance from the skin of 23 cm. Two days later, 90 per cent of a unit skin dose was applied to a ventral field in the region of the kidney with the same filters and the same focal distance. After the irradiations the secretion of urine increased markedly for eight days and then began to diminish; after a few days more it stopped completely. This form of treatment of pyonephrosis is to be recommended particularly in debilitated patients who could not survive a nephrectomy. The preliminary nephrostomy permits unobstructed drainage of the pyonephrosis and by eliminating the flow of toxins to the other kidney facilitates its return to normal. The dense adhesions produced about the pyonephrotic kidney by the drainage and irrigation of the pus sac render its removal difficult and dangerous. Under such conditions the treatment of choice is exclusion of the kidney by roentgen irradiation.

Chorio-Epithelioma of Testis.—Scheftel reports a case of chorio-epithelioma of the testis with a metastatic growth the size of a child's head originating in the mesenteric lymph nodes and adherent to the small and large intestines. In the tissue of both lungs there were numerous grayish red tumor nodules; the entire lower lobe of the right lung had been replaced by tumor tissue. Metastatic nodules in the neighboring lymph nodes had invaded the vena cava, the portal vein and the right ureter. Emphasis is laid on the rapidity with which chorio-epitheliomas destroy the blood vessels and give rise to metastases and on the resulting importance of an earliest possible diagnosis and surgical treatment. Roentgen rays and radium should be used only as adjuvant treatment to prevent lymph node metastases.

Acta Psychiatrica et Neurologica, Copenhagen

5: 323-438, 1930

*Blood Pressure During Epileptic Seizure. V. Hendriksen.—p. 323.
Cerebellar Tumor: Case. F. Leiri.—p. 339.
Cerebrospinal Fluid: Sugar Content. C. J. Munch-Petersen.—p. 347.
Simulation in Mental Diseases. A. Petrén.—p. 381.
*Intracranial Pressure: Determination by Bailliart's Method. K. Winther. —p. 403.
Insane Men as House Builders. J. Lundahl.—p. 429.

Blood Pressure During Epileptic Seizure.—Hendriksen studied the blood pressure of thirteen persons during sixteen epileptic seizures. In two instances the patient had status epilepticus, in two the seizure appeared spontaneously and in twelve it was induced by hyperventilation. It was noted that the epileptic seizure is always accompanied by a rise in the systolic blood pressure, whereas the diastolic blood pressure and the pulse are affected but little. In rare instances the rise in the blood pressure may be demonstrated some minutes before the attack, but most often it comes on immediately before the attack; it sets in suddenly and reaches its maximum in the beginning of the attack. The end of the attack is accompanied by an equally sudden fall in the blood pressure. When the seizure is over the blood pressure has usually reached the same value as before the attack and it remains at this level.

Intracranial Pressure: Determination by Bailliart's Method of Ophthalmodynamometry.—Winther describes Bailliart's ophthalmodynamometer and states that it is used thus: The instrument is placed on the eyeball and the intra-ocular pressure is increased while at the same time the central artery of the retina, which normally does not pulsate, is viewed through the ophthalmoscope. By a progressive augmentation of the pressure one sees first that the artery begins to pulsate and then, when the pressure is increased still more, the pulsations disappear. The appearance and disappearance of the pulsations represent, respectively, the diastolic and systolic pressures of the central artery of the retina and these constitute an index of the intracranial pressure.

CORRECTIONS

Pyelography.—In THE JOURNAL, Sept. 20, p. 904, the title of a paper published in *Hospitalstidende*, June 5, "Pyelography After Intravenous Injection of Merbaphen" was an error. It should read, "Intravenous Urography by Means of Iopax (Sodium 2-Oxo-5-Iodo-Pyridine-N-Acetate)."

Articles Published in Laryngoscope.—In THE JOURNAL, October 25, p. 1294, under the head *Kansas Medical Society Journal*, only the first five titles should be credited to that journal. The last four titles are those of papers published in the *Laryngoscope*, St. Louis **40:**627-706 (Sept.) 1930.

Control of Bleeding in Tonsillectomy, Operative and Postoperative. E. M. Freund, Albany, N. Y.—p. 675.
Stammering. R. M. Lukens and M. Trumper, Philadelphia.—p. 680.
Loaded Revolver Cartridge in Bronchus: Case. M. P. Stiles, Birmingham, Ala.—p. 683.
Peptic Ulcer of Esophagus. F. S. Mainzer, Clearfield, Pa.—p. 685.